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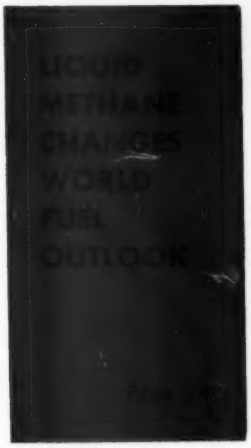

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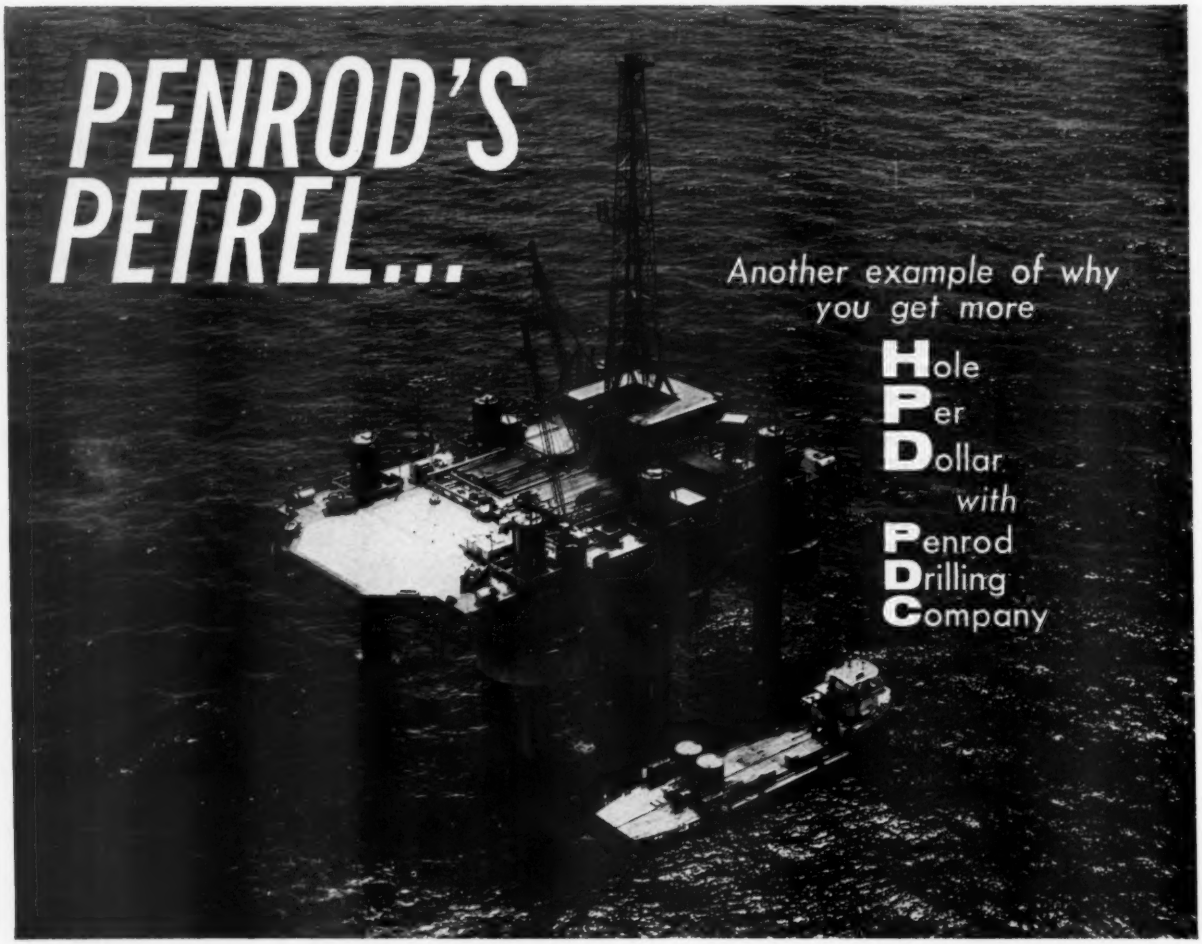

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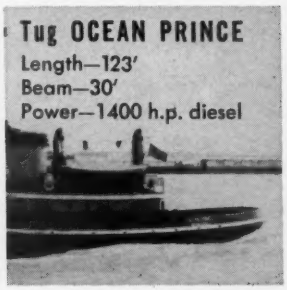

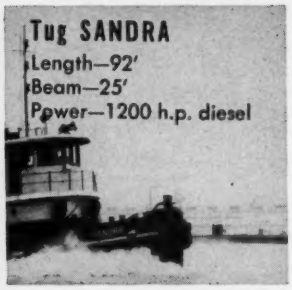

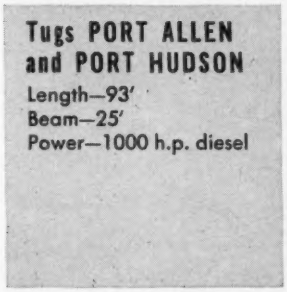

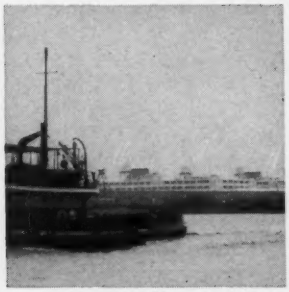

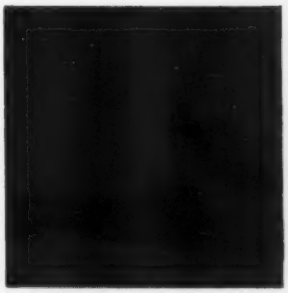

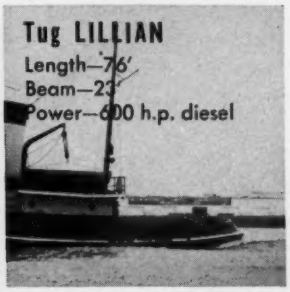

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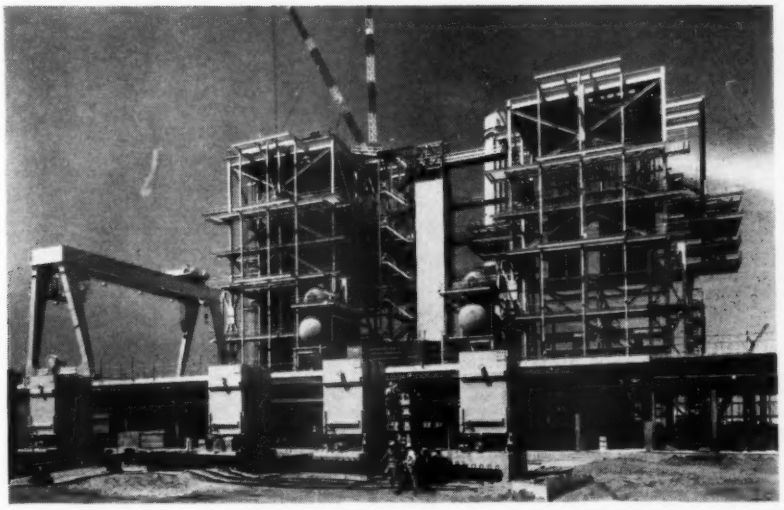
FRESH WATER NEWS

from Cleaver-Brooks Special Products, Inc.

CAPSULE REPORTS AND INFORMATION ON THE PRODUCTION OF FRESH WATER FROM THE SEA

Pilot plant in California may open new era in salt-to-fresh water conversion



In a contract recently awarded to Cleaver-Brooks Special Products, Inc., the Southern California Edison Company embarked on a far-reaching program for conversion of sea water to fresh water. The contract calls for construction of a sea water distillation plant with a capacity of about 100,000 gallons a day. It will be operated in conjunction with existing steam generating facilities at the Mandalay Steam Station near Oxnard, Calif. The operation will be the first of its kind in the country.

In awarding the contract, Southern California Edison revealed that Cleaver-Brooks Special Products had made its bid on an evaporator based on a new principle which greatly reduces required heat transfer surface and pumping power. The new unit can be used for both distillation through use of residual heat in cooling water and for distillation using steam extracted from the turbine.

Success of the pilot plant will signal a significant step forward toward the tapping of ocean water for use in home, industry and agriculture. However, Edison officials caution that at this time the water produced by the pilot plant is not expected to compete in cost with fresh water from natural present sources. The hope is that similar installations will eventually be advantageous to use in areas where current water costs are high.

Upon completion of construction, Cleaver-Brooks engineers, who worked with Edison in designing the job, will continue to cooperate in its operation.

NEW CONSTANT CAPACITY EVAPORATOR CAPTURES WASTE DIESEL HEAT TO SUPPLY FRESH WATER FOR OFF-SHORE RIGS

A new high-capacity waste heat evaporator for off-shore drilling rigs and tenders has been developed by Cleaver-Brooks Special Products, Inc.

Operating from waste heat of generator-driving diesels, the new flash type unit manufactures fresh water from sea water at constant output. And output is independent of drilling operations.

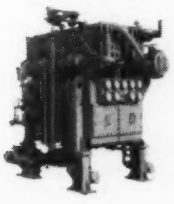
Costs are kept low due to conservation of fuel and unusually low maintenance requirements.

The heat required for evaporation is derived from the diesel engine cooling water. The flashing principle utilized by the new unit eliminates scaling problems common with conventional evaporators. Maintenance usually involves only simple brush-out after prolonged periods of operation.

As installed, the unit can provide pure water for drinking, drilling, make-up, bathing and cooking.

ENGINEERS EXPLAIN HOW NEW METHODS, MATERIALS CUT COSTS, REDUCE UNIT SIZE

According to Cleaver-Brooks engineers, savings of 30% on unit volume and 20% on unit costs are possible through new design and construction of the company's evaporation and distillation equipment.



For example, the deck space needed for a 12,000 gpd flash evaporator has been reduced from 70 sq. ft. to 55 sq. ft., height cut by 12%.

On the cost side, improved design using equally reliable but lower-cost materials and improved manufacturing techniques — resulted in cost cuts of 20% on one model.

Today, Cleaver-Brooks flash evaporators get one-eighth grain of sea salts per gallon of sea water rather than the usual residue of one-fourth grain per gallon — a 50% improvement in effectiveness.

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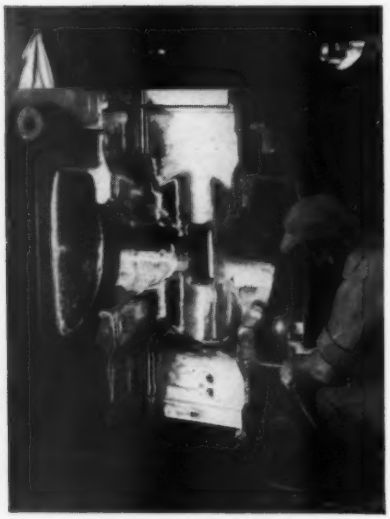

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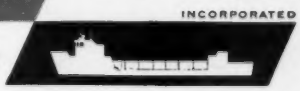

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Way offshore . . .

With the Publisher

If we weren't such a lazy bunch of bustards (defined as an extinct bird, lazy by nature, too indolent or something to fly), we'd maybe keep up with the endless projects we keep planning but don't seem to find time to carry out.

Not long ago, we started pounding away at the notion of drilling from floating vessels, figuring that was the best solution to cutting costs back to pocketbook-size when it came to drilling in really deep water. There have been some industry-rattling developments in that area, too, and we're tossing more at you this month (like the lead article on the completion down in the Gulf of Paria, and Jack Casey's notion for a floating platform-type rig).

But to tell the truth, the editors take off too much time to swat golf balls around the little horse pasture that surrounds our office, or to play badminton with the pretty secretaries, to keep up with all the ambitious projects that we find the energy to carry out. We've been wanting to start a new equipment inquiry card in OFFSHORE, and have done so in our companion publication, PETROCHEMICAL INDUSTRY.

Which accounts for some of our present troubles. The pretty secretaries are so frazzled-out from answering inquiries from the other magazine (and not from badminton, for they whup us easily there), that we just haven't had the heart to double their work load by starting one in OFFSHORE. Why, we got back nearly 750 from just one little ol' issue! In three months we've gotten so far behind we had to drop the card for an issue, to catch up.

But when the pretty little secretaries start smiling at us again, it's something we aim to start in OFFSHORE. And when we do, we hope we hear from everyone of you oilfield peckerwoods.

Every month!

Long John Latham

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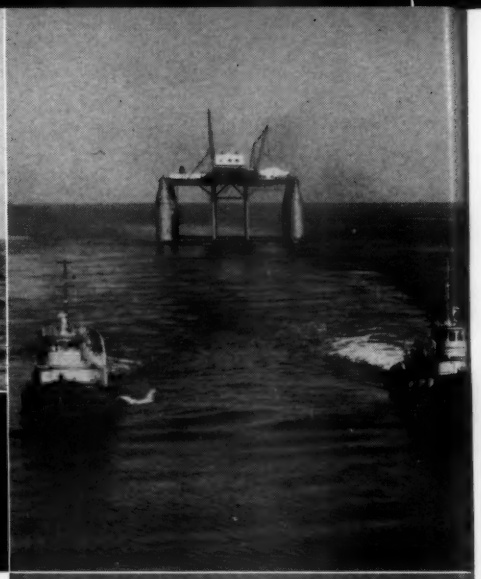

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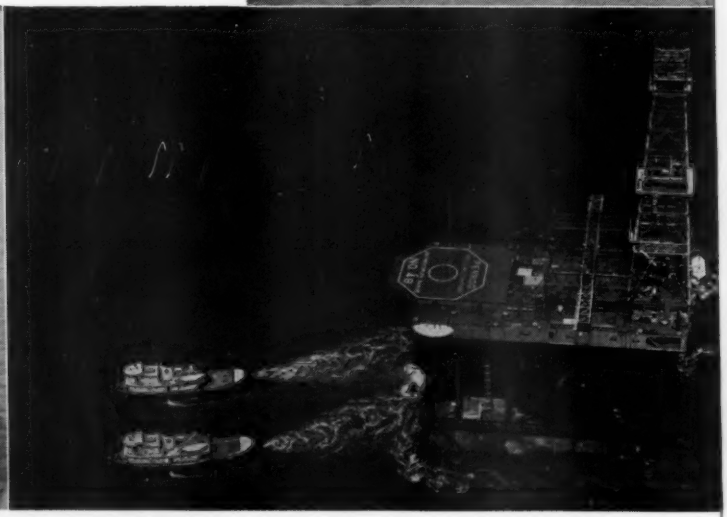

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ARROW SHOWS location of South Domoil 1, world's first discovery drilled from a floating vessel, located 20 mi. north of the Soldado field.

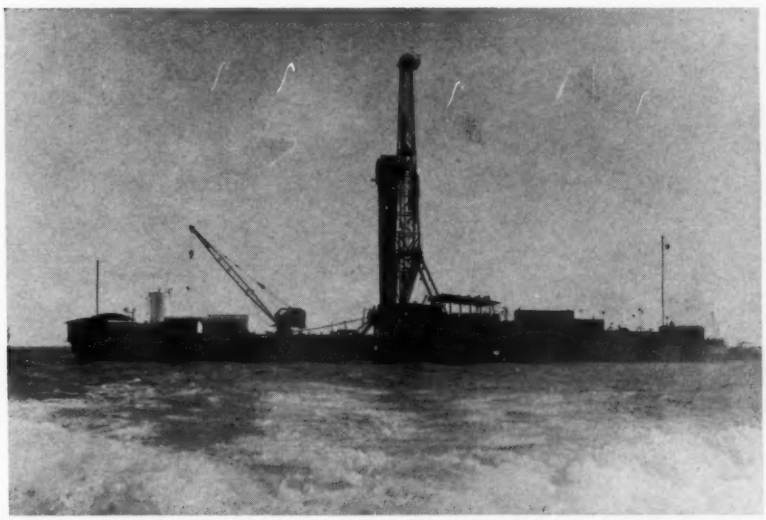
First in history . . .

Floating Vessel Drills Discovery

Converted supply vessel owned by The Offshore Company also penetrates 11,337 ft. off Trinidad for new depth record

The first oil discovery ever made from a floating vessel has been completed by Dominion Oil Company on the Trinidad side of the Gulf of Paria.

In the process the pioneering vessel, which is owned and operated by The Offshore Company of Baton Rouge, Louisiana, set a new world's depth record for floating barges, penetrating 11,337 ft. The record for a vessel of this type in the Gulf of Mexico is 9002 ft., set earlier this year by the **Nola I**, a floating barge owned and operated by Zapata Off-Shore Company of Houston.



FLOATING VESSEL which completed the recent discovery in the Gulf of Paria is a 240-ft. by 72-ft. by 15-ft. converted supply vessel mounting a 131-ft. Lee C. Moore derrick.

The discovery . . . The discovery well, South Domoil 1, is near the international boundary between Trinidad and Venezuela about 20 mi. north of the Soldado field, discovered by Trinidad Northern Areas, Ldt., the only other offshore field on the Trinidad side of the Gulf.

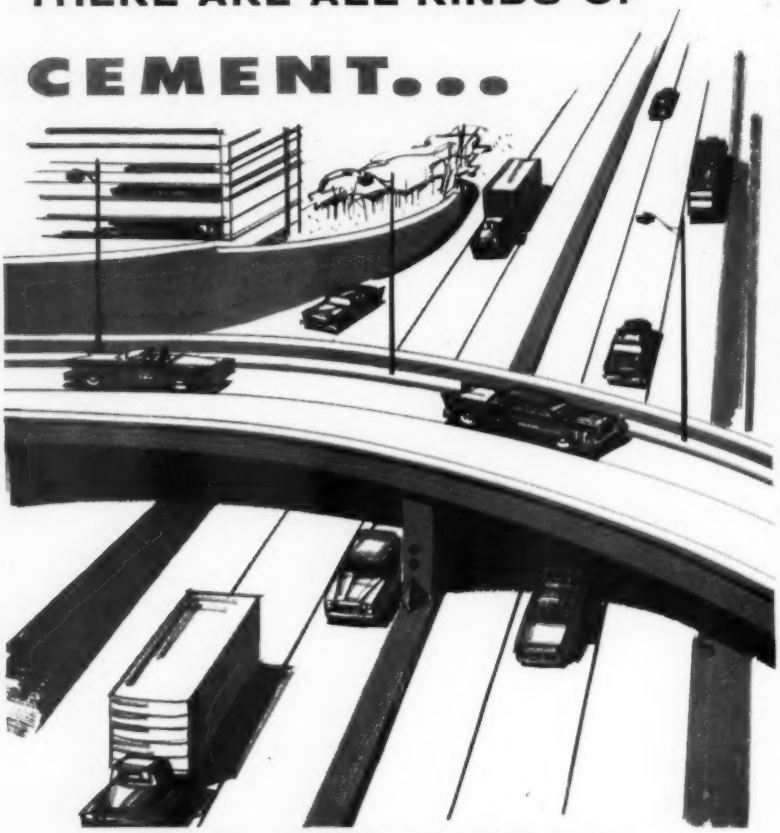
History making . . . Completion of an overwater well from a floating vessel had never been attempted before and was considered impractical with existing equipment by many engineers. Oil present in commercial quantities, however, decided Dominion and The Offshore Company to make the effort.

Previous efforts . . . Dominion had previously drilled three dry holes in the area since starting operations over a year ago. One of these, drilled late last year *(See OFFSHORE, December, Page 38)* set the then exist-

(Continued on next page)

THERE ARE ALL KINDS OF

CEMENT...



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CEMENT ADDITIVE

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Lower fill-up cost, generally, than neat cement
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Strata-Crete 6 can be obtained from your oil well cementing service company.

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1404 NIELS ESPERSON BUILDING HOUSTON 2, TEXAS

Floating Vessel . . .

(Continued from preceding page)

ing depth record for floating barges when it penetrated 10,800 ft. before the hole was abandoned for geological reasons. That test was drilled in 104 ft. of water, whereas South Domoil 1, the discovery, was drilled in water 93 ft. deep.

In comparison with Zapata's vessel which whomped down a 9000 ft. hole in a little over 13 days, the speed of drilling for the Gulf of Paria vessel has not been spectacular. Drilling costs, however, have been reduced until they are comparable to onshore costs.

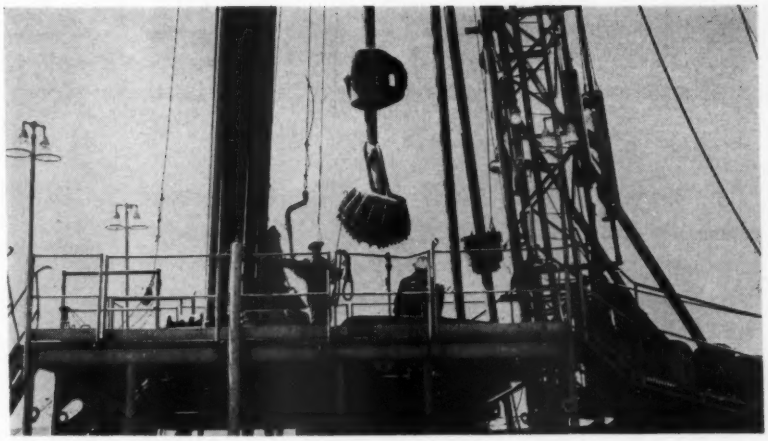
The vessel . . . The Offshore Company's vessel is a converted supply barge, the **McDermott Tidelands #4,** which measures 240 ft. by 72 ft. by 15 ft. It is equipped with six 6000 lb. Danforth anchors, two cranes, blowout preventer hose reels, constant tension devices for the submarine guide lines, and a 12-ft. diameter well cut in the center of the barge.

Drilling equipment . . . prior to the start of drilling in September, 1957, a 131-ft. Lee C. Moore mast was shortened to 100 ft. and 3½-in. drill pipe laid down in doubles. Shaffer submarine drilling equipment has been used since the beginning of the program.

Drilling program and equipment have been constantly modified and improved to suit conditions in the Gulf of Paria. The mast was lengthened to its original 131 ft. and reinforced in order to stand back all the drill pipe in trebles, and 4¼-in. drill pipe was used to drill conventional size holes. A drill nipple was added with the necessary compensating devices and block guide rails replaced the original cables. Constant tension devices are rarely used, although they are still installed.

Operating conditions . . . Operations were carried on in weather conditions ranging from dead calm to 14-ft. swells. The larger swells are extremely rare and drilling is not attempted during these periods, although other operations can continue. By using additional bumper subs in the drill string and a recently designed drilling nipple, Dominion believes it can continue drilling in at least 10-ft. swells.

Because operations are affected by the constant movement of the barge and drilling equipment with respect to the hole being drilled, a self-actuating compensating device was installed to keep wire line tools stationary with respect to the hole.



BIG BIT and reamer, each four feet in diameter, hang above rig floor at mine site.

Mammoth holes drilled . . .

Quite A Bit

Grant's 46-in. drill bit pushed 1432 ft. into desert floor to cut ventilation shaft for one of Phillips' uranium mines

A 46-in. hole drilled by the king-sized bit shown in these pictures had to be a duster.

The bit, manufactured by Grant Oil Tool Company, Los Angeles, was pushed 1432 ft. into the desert floor to cut a ventilation shaft for Phillips Petroleum Company uranium mines near Grants, New Mexico.

The drilling company reported that the giant bit, followed by two Grant 46-in. reamers, did a remarkably good job of straightening and reaming the hole so that casing could be run without difficulty.

To enable drillers to unscrew bit and reamers from the drill stem, a mud-tight door was installed in the riser of the 48-in. conductor pipe. When bit was pulled, a special box was inserted through the door and bit was then lowered to rest on box while drillers worked on it.

SUCCESSFUL COMPLETION by the 46-in. Grant bit meant air at 1432 ft. for Phillips Petroleum Company. Standing between the bit and one of the reamers is Clarence Leathers, Grant's 6-ft. 2-in. chief engineer.

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Substitute engine parts can eat you up in maintenance costs. Insist on genuine Cummins parts for your Cummins Diesels. Available 24 hours a day at any of our 16 service-repair shops throughout the Mid-Continent area.

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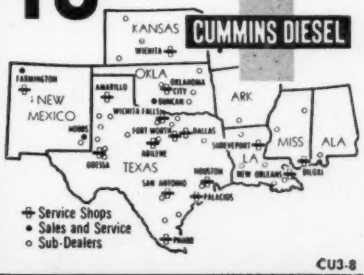

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"Reserves in the Gulf are located right here in our own back yard, safe from foreign government confiscation . . . another reason for our conviction that the long-range future of Louisiana's offshore oil industry is indeed secure."

Louisiana's Future Offshore

Top official tells why marine oil future is bright, prescribes six-point program to put drilling back on top

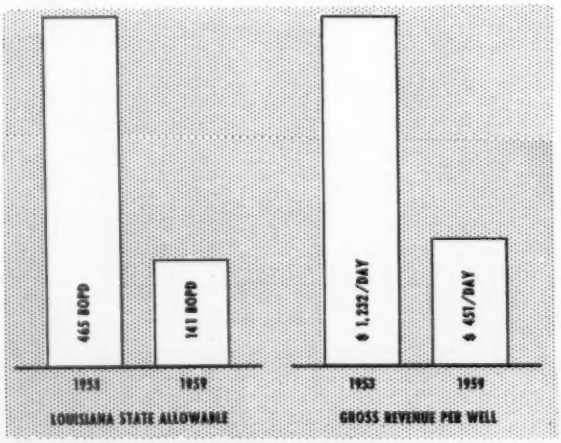
By H. C. TEASDEL

President, The California Company

Despite burdens imposed on the industry by failure of the Supreme Court to define title boundary lines, development offshore has proceeded at a rapid pace. The Louisiana Oil Scout Association reports that 2443 wells had been drilled into the Gulf at the end of 1958.

You will note that 255 exploratory tests were drilled, of which 162 were dry and 93, or 37 percent, were successful .

Similarly, 2188 development wells were completed, of which 1633 (76 percent) were productive and 525 were dry.



REVENUE DATA on a typical offshore well 8000 to 9000 ft. in depth shows the effect of allowable reduction which discriminated against the offshore operator.

Reduced to ratios, about one of every 2.8 wildcats drilled was successful. This ratio compares very favorably with a national onshore average which is generally reported as one of every nine wells drilled.

The dry hole ratio for development wells shows that one of every 1.3 wells completed was successful. This ratio also compares favorably with development drilling onshore.

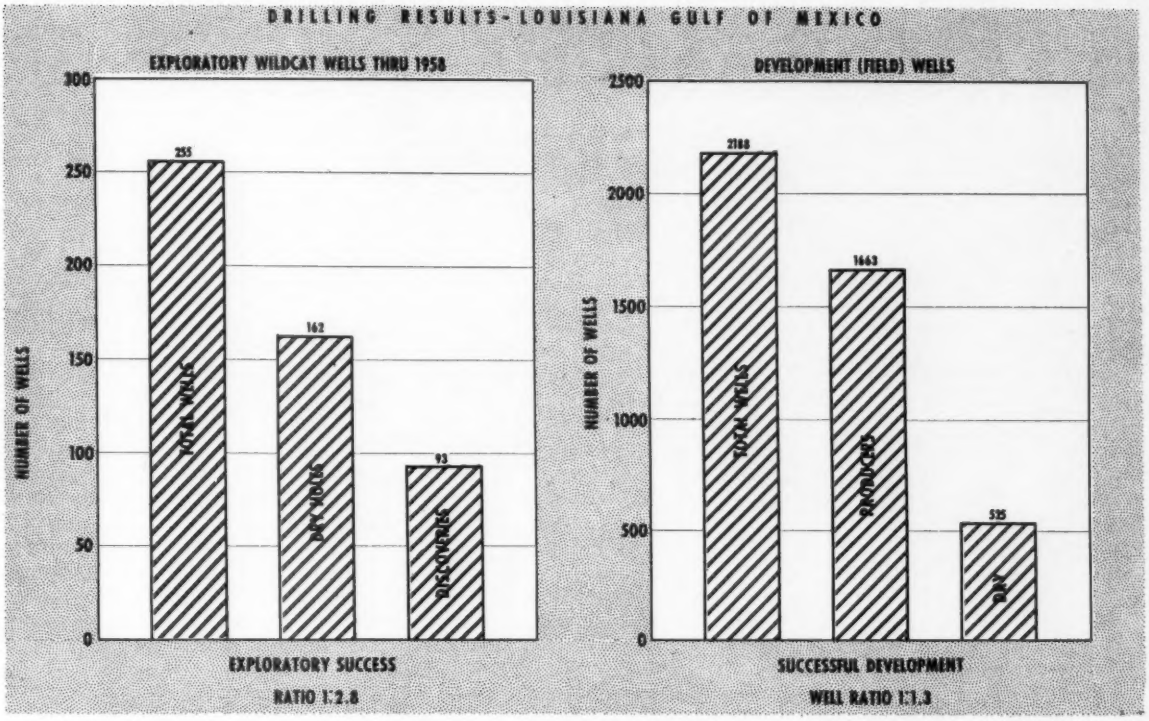
One other major point—an operator drilling in the Gulf of Mexico stands a better chance of finding a major oil field than onshore. The oil producing basins in Texas, the Mid-Continent, the Rocky Mountains and Southern California have been explored.

I do not mean to imply that continued exploration in areas other than the Gulf will not find future large fields where the reserves exceed, say, 50 million bbls. I do feel, however, and I am sure that geologists familiar with the Gulf will agree, that the opportunity to find a large reserve today within United States boundaries is better in the Gulf than in areas located onshore.

Louisiana's State Conservation Commission reported that Louisiana produced last December 952,865 bbls. of oil per day including crude and distillate. Of this volume 180,973 bbls., or about 19 percent, was produced in the Gulf of Mexico.

Similarly, the state produced last December 7.7 billion cu. ft. of gas per day, of which .8 billion cu. ft., or 10 percent, was produced in the Gulf.

When we recall that offshore did not really get underway until after World War II, that the total production in January, 1950, was less than 6,000 bbls. per day, and learn that offshore is today contributing almost one-fifth of the total state produc-



AMAZING SUCCESS has been recorded by Louisiana offshore operators whose wildcat ratio of one hit for every 2.8 holes drilled overshadows the onshore average of one hit for every nine wells drilled.

tion, we can get some concept of the truly amazing increase in the rate of production in the Gulf.

In my view, there can be no question about the long-range future of Louisiana's offshore oil industry. The reasoning which leads to this vital conclusion is based on a number of factors.

The rate of growth is giving oil executives deep concern about the nation's reserves. The United States is depleting its oil and gas reserves far faster than most other countries of its size.

Knowledge of this trend has spurred the search for new reserves in both the United States and in foreign countries. The search is becoming more difficult and more costly.

Reserves in the Gulf are located right here in our own backyard, safe from foreign government confiscation, close to the area of consumption. Here we have another reason for our conviction that the long-range future of Louisiana's offshore oil industry is indeed secure.

But what about the short-range future for Louisiana's offshore oil industry?

Let us take a look at what has happened in the last year and a half.

Rigs in operation . . . Reduction in the number of rigs running has worked hardships on individuals and companies who have invested substantial sums in the Gulf.

How do we explain this contraction in offshore operations?

It is due in part to the fact that operators had resolved by September, 1956, much of the acreage acquired at earlier lease sales. As a matter of fact, some 321,000 acres of leases originally issued had been surrendered at the end of 1957. With no new leases to drill, demand for equipment fell off.

Another factor and certainly of greater importance, has been the sharp contraction in the profit available from operating offshore. This decline in profit resulted partly from higher operating cost caused by higher wages and higher cost of materials. The greatest damage to profits, however, resulted from the very sharp reduction in the allowable rate of production granted by the state to an offshore well.

Allowables . . . Louisiana has used and is currently using a depth formula to fix the allowable rate of production for an individual well. In April, 1953, a well completed in the 8000 to 9000 ft. interval onshore was allowed to produce 215 bbls. per day. A similar well drilled offshore could produce 465 bbls. per day, about 2.1 times more than the onshore well. Today, however, the same onshore well can produce 81 bbls. per day and the same offshore well can produce 141 bbls. per day, which is 1.7 times the rate for the onshore well.

What will it take to revive the offshore industry? What will it take to get equipment now idle back to work?

Stated simply, these questions may be answered: The company which operates offshore will have to realize a profit commensurate with the extraordinary risks inherent in offshore operations and the huge capital sums required for offshore operations.

More specifically, we need a six-point program:

(1) The operator himself should take every possible step to cut the cost of exploring, drilling, producing and transporting. Some of the larger companies are working actively on research programs to accomplish these objectives. Operating methods,

(Continued on next page)

Condensed from a talk entitled "The Future of Louisiana's Offshore Oil Industry" given before the Gulf Offshore Marine Service Association. Illustrations courtesy The California Company.

For Double-Barreled Protection
Against Corrosion in Offshore Equipment

Use Carboline Protective Coatings

Here's a super-tough, easy-to-apply coating system — Carbomastic #3 and Phenoline 305 — for long-lasting protection of rigs, barges, tenders and other marine equipment. It's a service-proven, double-barreled safeguard against:

CORROSION — protects against the corrosive effects of salt water, marine atmosphere and chemicals

IMPACT and ABRASION — coating resists damage during fabrication and under rough treatment of dropped tools, pipe and other heavy objects

HAZARDOUS FOOTING — provides a non-skid walking surface.

The following Carbomastic-Phenoline combinations are recommended for areas exposed to varying degrees of corrosion:

JACKET SECTION — one coat of Carbomastic and two coats of Phenoline in the splash zone. Carbomastic for resistance to marine atmosphere, Phenoline for resistance to impact, abrasion and chemicals

DECK SECTION — for deck section of platforms: one coat of Phenoline Primer and one coat of Phenoline Finish

BARGE EXTERIORS — for hulls, rakes, bottoms, etc.: one coat of Carbomastic and two coats of Phenoline for protection against marine atmosphere, impact, abrasion and chemicals

NON-SKID COATING — for hazardous walking areas on steel decks: one coat Phenoline Primer and one coat Phenoline Finish with Special Silica Filler

BARGE INTERIORS — one or two coats of Carbomastic, for protection against condensation and sweating.

WRITE for details of Carboline's "Engineering Approach" and bulletins 600 and 803.

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Future Offshore . . .

(Continued from preceding page)

equipment design, equipment performance, manpower efficiency, wave forces and many other factors are being carefully studied.

(2) The industry needs an early resolution of the tidelands ownership problem.

(3) The industry needs an increase in the offshore allowable. The offshore operator cannot achieve an acceptable return on the very large investment required until the gross revenue from a well is increased, and the gross revenue from the well cannot be increased until the allowable is increased.

There is just so much market to apportion to the onshore producers and the offshore producers, but the basic plan adopted by the state years ago recognized the principle that a deeper well costs more than a shallow well, and for this reason the deeper well was granted a higher allowable. This principle still holds.

(4) The offshore operator needs full cooperation from the governmental agencies which regulate the equipment he must use, the installations he must make, the personnel he must employ, and the practices he must follow.

(5) The industry needs more sympathetic consideration from Congress. There are some members of Congress who are sharpshooting at the percentage depletion allowance granted the oil industry. This percentage depletion allowance has been in effect for 33 years. Tremendous investments have been made because it has been in force. Any attempt to reduce percentage depletion or eliminate it is not only a violation of good faith, but more important, a threat to our future national security.

(6) The state of Louisiana could well extend more sympathetic consideration to the offshore operator. The recent increase in severance tax added one more burden to offshore operation.

If there is any industry the state should encourage, it is the oil and gas industry. The Governor's report for the fiscal year ending June 30, 1958, shows the state collected over $225 million from oil and gas sources—approximately half of the total income collected from sources within the state. If the state wants a major offshore oil industry, it could well afford to grant special tax consideration to the offshore operator.

THIS SUBMERSIBLE drilling barge equipped to drill below 20,000 ft. left for its first location near Larose, Louisiana, immediately after its christening by Bay Drilling Coroporation.

Powerful shallow water rig . . .

Drill Barge 'Rome' Ready

Built by Levingston Shipbuilding Company, this modern unit can drill to 20,000 ft. plus in remote swamp locations

On the **Rome,** Bay Drilling Corporation's new submersible drilling barge, many man hours are saved because the hydraulic lines for the blowout preventers are located beneath the derrick substructure where the operator commands a complete view of the setting of the blow-out preventers.

The powerful slotted hull type steel barge is designed to drill to depths below 20,000 feet and is completely equipped to operate in remote swamp locations. Completed by Levingston Shipbuilding Corporation at its Orange, Texas, plant, the unit was named in honor of Dan J. Rome, assistant superintendent for Bay Drilling.

Dimensions . . .The new drilling barge measures 190 ft. long by 50 ft. wide and has a hull depth of 14 ft. Its slot length is 86 ft., and the slot depth is 10 ft. Derrick substructure and superstructure were erected above the main deck for the support of the derrick, drilling machinery, pipe racks and quarters.

Features . . . One outstanding design feature is that the derrick floor is almost completely enclosed and is shut off from the engine area by a fire wall. To simplify washing down, the red concrete derrick floor was sloped to the outer perimeter of the house to a built in drain channel.

In order that the crew will not have to walk on the machinery deck when passing to and from the derrick floor, a raised walkway was built from the quarters house to the derrick floor. Another innovation is two sliding drip pans installed under the rotary.

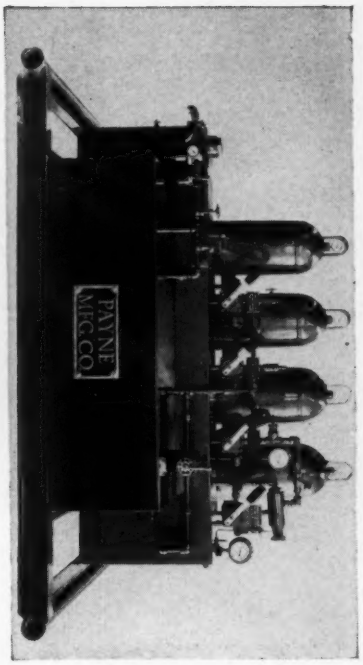
Equipment . . . Providing the vital safety factor for drilling in high pressure Gulf Coast formations are four Cameron type blowout preventers actuated by two Hydril type accumulators.

Mud system . . . The **Rome** is provided with a mud elevator designed by O. O. St. John, superintendent of Bay Drilling. Three Lightnin mixers mix and agitate the mud.

Storage . . . In designing storage facilities, the engineers provided for a fuel capacity of 1454 bbls. and a drill water capacity of 4596 bbls. Storage is available for up to 2039 bbls. of liquid and for 928 bbls. of potable water.

Quarters . . . For the comfort of the crew, living quarters are air conditioned by two General Electric five-ton Weathertron units. The galley is equipped with modern appliances and the dining area serves seven men at a time.

The owner . . . Bay Drilling Corporation was founded in 1956 by Harvey A. Peltier, and the **Rome** is the second drilling barge built by the company.



NO SHUT-DOWNS TO REPLACE EXPENSIVE RUBBER PARTS

PAYNE NON-SEPARATOR TYPE ACCUMULATORS in combination with PAYNE FAST-ACTING AUTOMATIC PUMPS have changed the whole picture of hydraulic power. They offer the most reliable and yet the most economical operation of blowout preventers and pressure operated valves on the market today.

Each 20 gallon accumulator contains a free-moving metal float which takes the place of unreliable rubber goods (bladders and diaphragms). Any volume of fluid is available with multiple units.

Payne Fast-Acting Automatic Pumps keep pressures at the proper level (2,000 psi) and instantly produce additional pressure for emergencies.

Ask anyone who has replaced old-style accumulator units with Payne Non-Separator Type Accumulators — you will understand why the reliability and increased economy of these advanced units have placed them on rigs throughout the drilling areas of the world.

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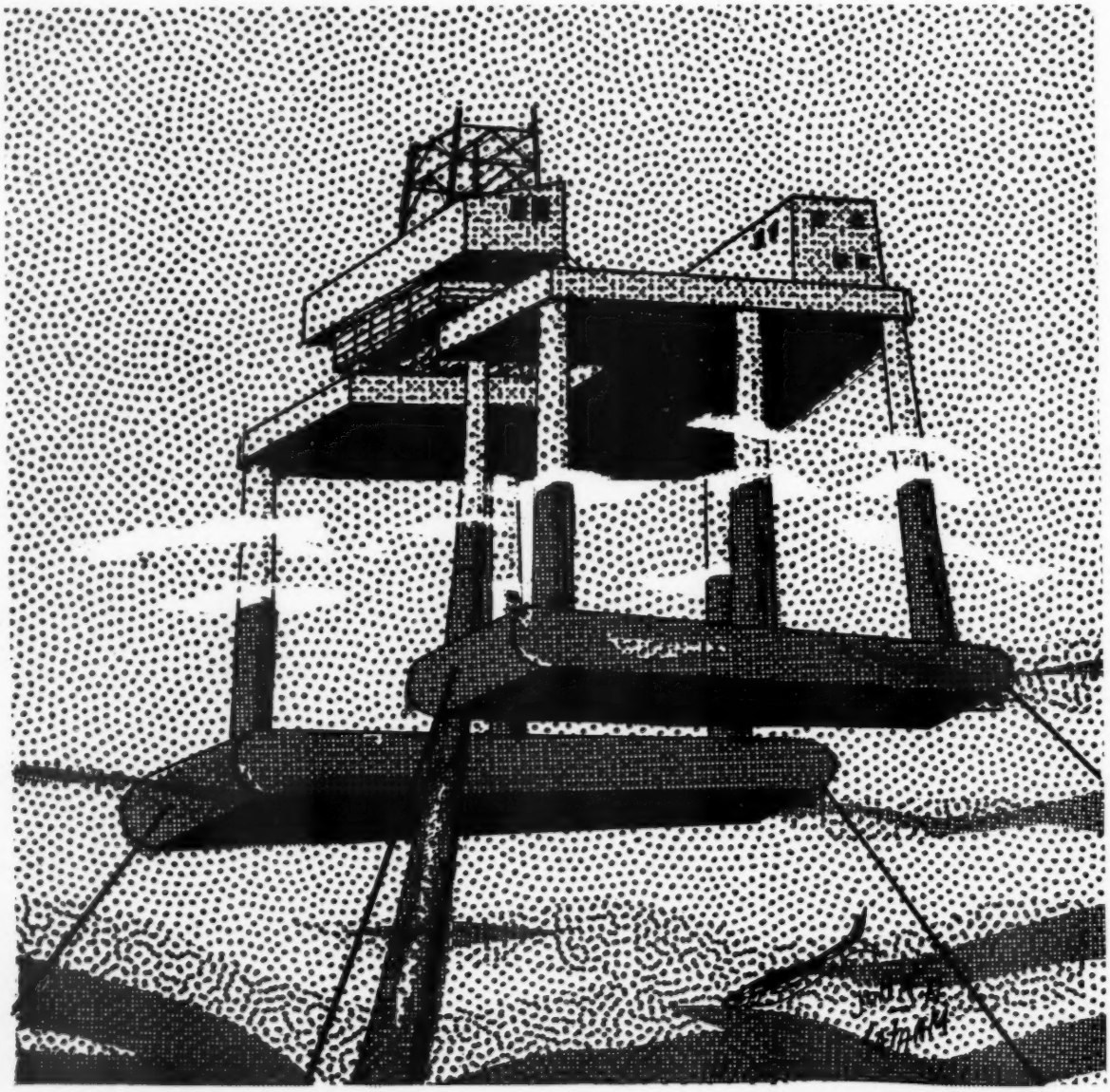

Floating Rig For Deep-Sea Drilling, Mining

Design for self-propelled craft to operate in water depths up to 1000 feet

DESIGNED TO DRILL for oil and gas in water depths up to 1000 feet, and to conduct hydraulic mining operations in somewhat deeper waters in the submerged canyons and valleys of the continental slope, the floating rig pictured in the artist's conception above is the brain child of boat-builder Jack Casey of P. O. Box 175, Mermentau, La.

Arriving at an offshore location for either drilling or mining operations, the self-propelled unit would drop a 4-anchor pattern to position itself exactly over the desired site. Six 50-ton cone-shaped anchors, not shown in the drawing, would complete the stabilizing system. With anchors out, ballast tanks in the twin hulls would be flooded and submerged below wave action. The main deck would be transformed into a stable platform some 35 ft. above the horizon water level, from which drilling or mining operations could be safely conducted.

Propulsion power, which would also be used for operational power, would be located in the submerged hulls. Storage for drill pipe, drilling mud, fuel, etc. would also be located in the hulls. Low center of gravity would make the rig exceptionally stable.

In case of a blowout or fire, rig could be moved quickly away from a wellhead by releasing weight anchors, letting go sway anchors on the bow, and allowing tension of the stern sway anchor cables to pull the rig backward out of danger. Also, propulsion machinery could be reversed.

A small unit could be built for about $1.5 million, according to the inventor.

Protect your investment

When your drilling program is engineered by Milwhite, your investment is protected.

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Construction Will Begin Soon On Offshore Sulphur Pipeline

Freeport Sulphur Company to use 7-mi. undersea line to bring molten sulphur from first marine sulphur mine

Construction will begin in the Gulf of Mexico next month on the world's first sulphur pipeline.

The seven-mile undersea line will carry molten sulphur from Freeport Sulphur Company's mine in Block 18, Grand Isle area to the shoreline. This method of transportation eliminates hazards the often-turbulent Gulf creates for barge hauling.

Three concentric pipes plus two others strapped to the sides will make up the line. Inside the 14-in. protective casing will be a 7⅝-in. hot water line and a 6-in. sulphur line, both of which are to be made of high-tensile steel. Two pipes strapped on the outside will carry water to the mines from shore as well as give additional supporting surface for the main line on the soft clay ocean bottom.

Molten sulphur at 320° F. will be pumped through the 6-in. pipe. Surrounding this will be the 7⅝-in. line carrying specially treated water heated to 320° F. A 2¼-in. layer of thermal insulation will be placed between the middle and outer pipes. The 4½-in. pipe strapped to the outside of the 14-in. casing will pump the hot water back to the mine for reuse. A second outside pipe, 6⅝-in. diameter, will carry fresh water to the mine.

Since the sulphur must be kept at 320° F, engineers encountered, among other problems, that of expanding pipe as result of the heat. Instead of providing expansion joints or loops for the inner pipe, Freeport plans to heat the pipe to 225° F, allowing it to expand, before fastening it to the outer line. The outer line will then be anchored at each end.

To bear the weight of the two inner pipes, Freeport placed ball bearing rollers every 19 ft. along the line between the two outer pipes. These will allow movement during expansion and contraction without wearing out the insulation.

Floating Vessel May Drill Hole Through Earth's Crust

A floating vessel may soon have the honor of drilling the deepest hole ever made by man. The National Academy of Sciences is making plans for the project, intended to penetrate the earth's crust.

Since the earth's crust is thinner in the deep ocean areas, the scientists chose to drill the mammoth hole at sea. Funds for the effort will come from both federal and private sources, according to reports.

Alaska

Leading Alaskan Operator Co-Sponsors Big Building Job

When overwater drilling operations finally come to Alaska, pioneer operators will have plenty of office space.

Construction of two modern multi-story buildings, a hotel and an office building, will begin in the spring. Located in Anchorage, the twin projects will cost Michael T. Halbouty and Walter J. Hickel $10 million.

Halbouty of Houston is an independent oilman presently engaged in oil exploration work in Alaska. Hickel is an Anchorage real estate developer and hotel man.

The 11-story office building, to be known as the Hickel-Halbouty Building, will be connected to its twin, the Captain Cook Hotel, by an enclosed hall.

14,373-Ft. Wildcat Plugged Near Alaska's Kanatak Bay

After drilling for 17 months to a total depth of 14,373 ft., Humble Oil and Refining Company abandoned Bear Creek 1 near Kanatak Bay as a dry hole.

The Alaskan Peninsula wildcat was plugged last month. Humble did not make public any plans for continued development. By drilling two more wells in that area, Humble can gain 50 percent interest in Kanatak concessions totaling 260,000 acres, according to their contract with Shell Oil Company.

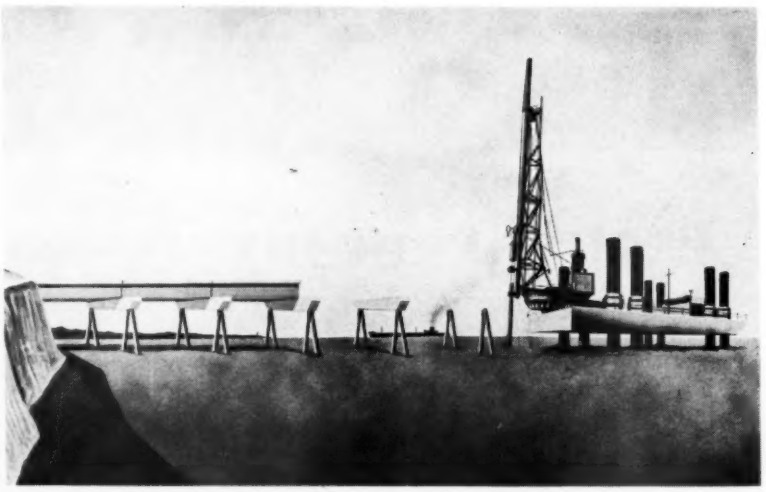
Bahamas

Expensive Offshore Test May Become Deepest Hole

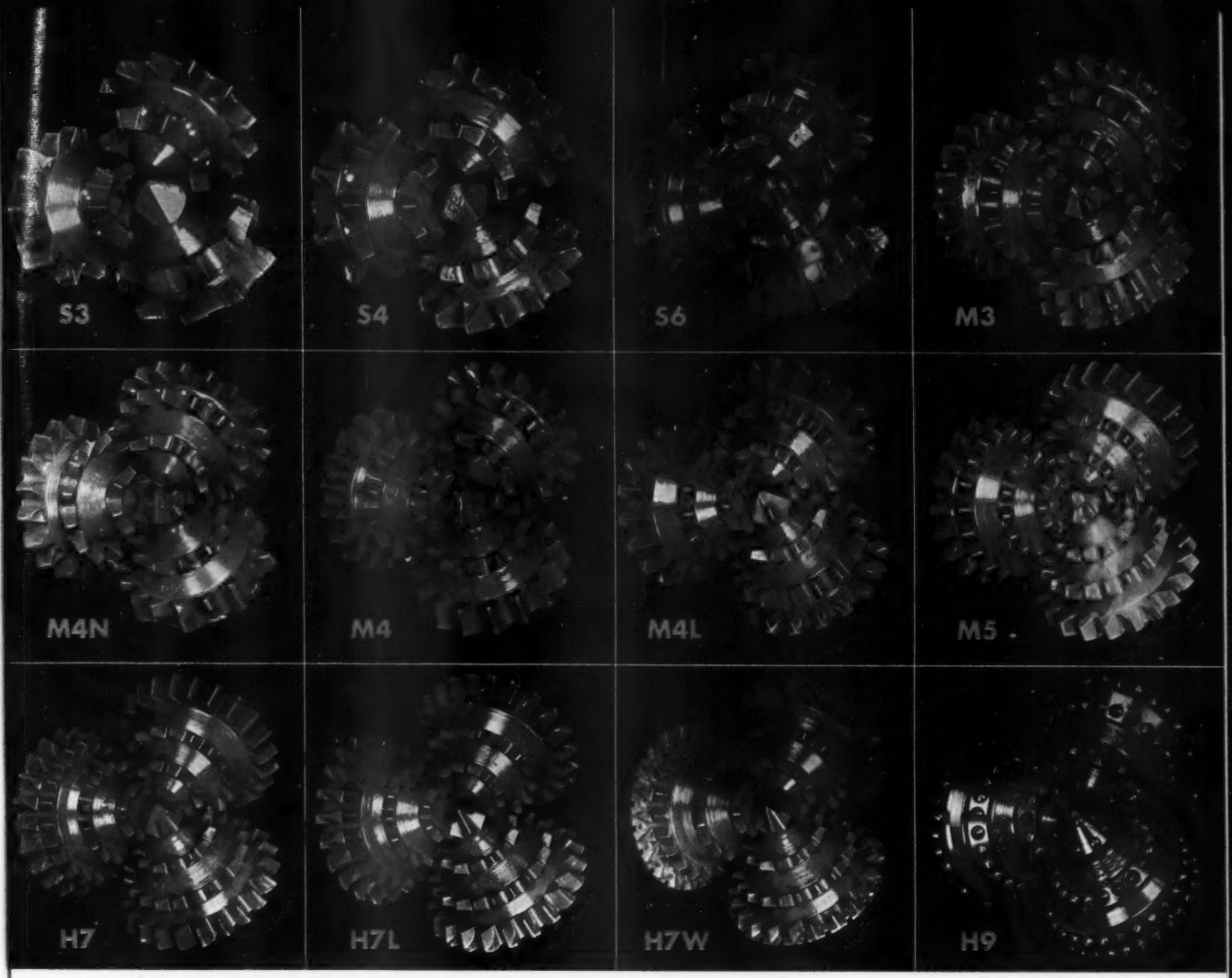
What may wind up as the deepest offshore hole ever drilled has passed 18,466 ft. and is still going.

The wildcat well is the Cay Sal 4-1

(Continued on page 22)



NEW USE for mobile units has been originated by the Germans who mounted a 10-ton pile driver on the rear of this platform and used it to speed up construction on a jetty at Wilhelmshaven. The 108 ft. by 69 ft. unit, which is similar in design to the ADMA ENTERPRISE, was completed at a shipyard in Emden in what appears to be a record time of only three months.



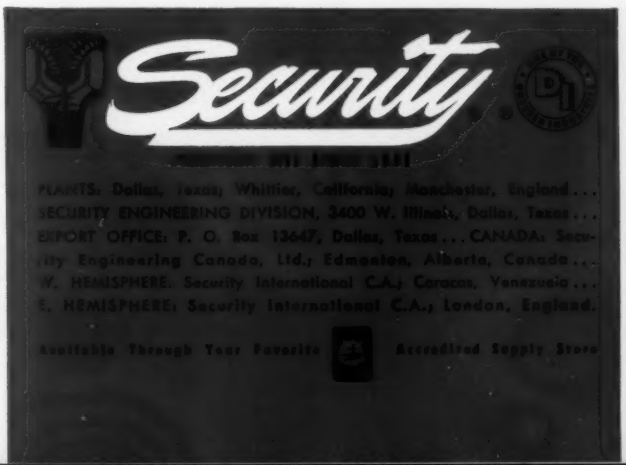
SECURITY Makes the *Right Bit* for the Job!

Security manufactures a *complete line* of rock bits — including 1120 types, sizes, and other variations — a few of which are illustrated above. Each satisfies a specific combination of drilling conditions, to meet the oil industry's most exacting requirements.

There are Security bits for the softest shale having the lowest compressive strength. There are Security bits for every intermediate condition and complication up to and including the hardest flints and quartzites.

Security bit sizes range from 5⅝ to 15 inches. Pin sizes vary from 3½ to 6⅝ inches. Circulation types include regular, jet, air, and jet air.

Selecting the RIGHT bit assures fastest penetration, maximum footage, and greatest drilling economy. Rely on Security to furnish the RIGHT bits for every well you drill. Send for Security's 1959 fact catalog of rock bit information.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Cay Sal Test . . .

(Continued from page 20)

located in the Bahamas about halfway between Florida and Cuba. A project of Standard Oil Company of California and Gulf Oil Corporation, the test is being drilled in 30-ft. water from Zapata Off-Shore Company's mobile unit **Vinegarroon.** One of the most expensive tests ever drilled, it was budgeted $3 million by Gulf and Standard prior to the start of drilling more than a year ago. It was originally projected for a depth of 15,000 ft.

So far, no information has been given out on what has been found.

Bay of Bengal

Shell Uses Amphibious Plane In Exploring Bay Of Bengal

An airborne search for oil is being made on Shell's 8750 sq. mi. lease in the Bay of Bengal.

Usually conducted from ships, seismic operations here are being carried out by a Catalina amphibious aircraft which taxies over the surface of the shallow turbulent bay. The plane is fitted with specially adapted seismic equipment developed and tested by Shell in Holland and Pakistan.

This unique method of doing marine seismic work is necessary because the Bay of Bengal is too shallow for large ships. Also craft entering the bay must be capable of at least 20 knots in order to escape sudden heavy gales and strong currents.

California

Platform Supports Will Be Drilled Into Hard Ocean Bed

A new method for drilling of piling into the ocean floor to support template-type platforms has been developed.

Indications are that template type platforms will be used principally in California waters, and most of them will be supported by pilings that are drilled in instead of driven in as is the practice in the Gulf of Mexico.

When California's first stationary platform was positioned off Summerland last year, it required 25 days to jet its caissons through 25 ft. of overburden. In many places the sea floor off California is clean and hard, making this procedure impossible.

Socal Abandons First Test On 3500-Acre State Lease

The first offshore well drilled on a 3500-acre lease 20 mi. west of Santa Barbara, California, has been abandoned by Standard Oil Company of California.

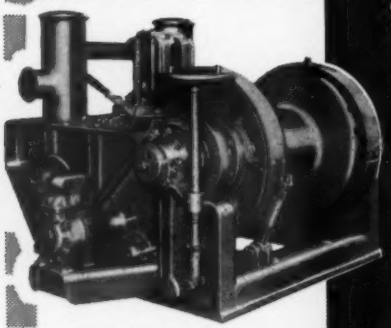
The test was located near Refugio Beach State Park on a 3500-acre lease (PRC 2198.1) which Standard of California acquired last year for a bonus bid of $771,000.

A mobile unit, which spudded in last December 27, drilled the wildcat to a total depth of 6670 ft. The company is now reviewing results of the unsuccessful operation before planning further action on the lease.

California Steel Platform To Get Another Drilling Rig

California's first stationary steel platform located off Summerland, California, will soon be outfitted with a second drilling rig.

Standard Oil Company of California, the operator on the 550-acre lease, which its holds jointly with



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Humble Oil and Refining Company, plans to have the second rig in operation by early summer. The $2.3 million platform was built to allow drilling of two wells simultaneously, but Standard has waited until several wells were completed before adding the second unit.

To facilitate the drilling of two wells at the same time, the platform was equipped with a 140-ft. Lee C. Moore derrick with two crown blocks and two separate hoists.

Services Of CUSS Group Offered By New Company

A newly-formed West Coast Company is offering the offshore services formerly carried on by the CUSS group.

The new firm is Global Marine Exploration Company specializing in offshore drilling, engineering and construction. Officers are former top CUSS group officials. They are R. F. Bauer, president; A. J. Field, vice president and general manager; and Hal Stratton, vice president.

The CUSS group made up of Continental Oil Company, Union Oil Company of California, Shell Oil Company and the Superior Oil Company was principally engaged in coring operations off the coast of California. During its tenure, the group drilled nearly 500,000 ft. of core holes from floating vessels, including one 6300-ft. test from the CUSS I.

Canada

Marine Exploration To Begin North Of Arctic Circle

Offshore operators may soon begin exploration off Canada north of the Arctic Circle.

Several firms recently filed with the Canadian government applications for permits on 50 million acres in the Arctic. Already, such permits have been issued on 76 million acres.

The Arctic Islands and continental shelf underneath the seas between the islands are under scrutiny for possible oil and gas productions.

Honduras

Phillips Drills First Wildcat On Honduras' South Coast

The first wildcat in Central America for Phillips Petroleum Company is drilling ahead.

Located on a 2-million acre lease on the southern coast of British Honduras the wildcat was nearing the 5000-ft. mark at last report, Phillips acquired the lease from Bandini Petroleum Company.

Lake Erie

Leading Lake Erie Operator Has High Operating Profit

Lake Erie's leading operator has reported a net operating profit for 1958 of $514,190.95 on total gas sales of $780,366.30.

Consolidated West Petroleum Limited, Toronto,Ontario, drilled 15 wells in the lake last season and completed 14 wells as gas producers in the Salina and Guelph formation, principal producing zones in Lake Erie. A wildcat well was abandoned after failing to obtain production in the Trenton limestone, 1649 ft. below the top of the Guelph formation.

To connect the new wells to the gathering system, Consolidated West laid eight mi. of three-in. pipe and six mi. of six-in. pipe.

Through the drilling of a number

(Continued on page 25)

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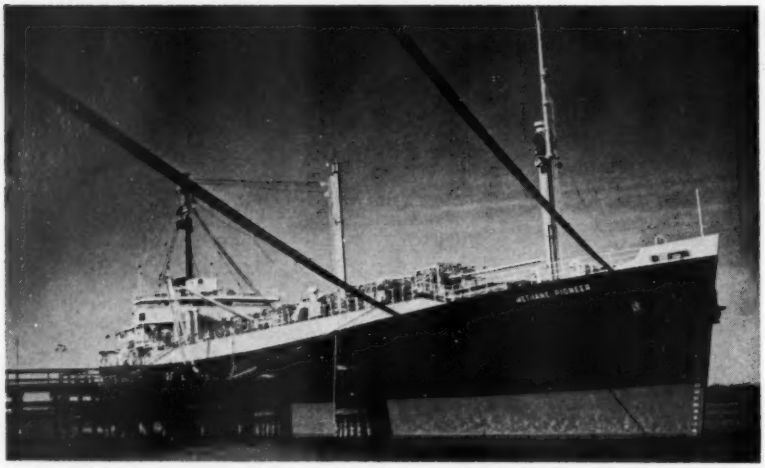


VOYAGE OF "METHANE PIONEER," which carried historic cargo of natural gas in liquid form from U.S. to England, will have tremendous influence on world fuel markets.

Liquid methane

Changes World Fuel Outlook

Success of first trans-ocean delivery to British Isles highlights terrific economic import of new transportation method

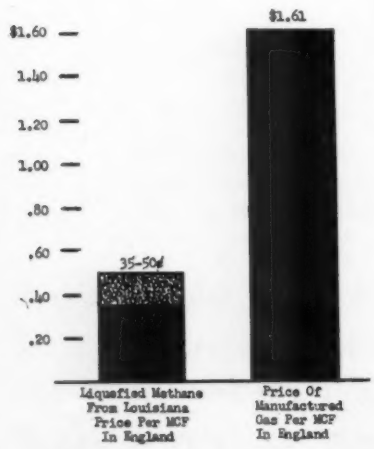
In a history-making voyage, a converted dry cargo ship, the **Methane Pioneer,** has delivered 32,000 bbls. of liquid methane to the British Isles, successfully demonstrating a new transportation technique that is already having dramatic impact on world fuel markets.

Of primary significance is the fact that liquid methane promises to replace gas manufactured from coal and oil in nations such as England, giving these nations a fuel supply at less than one-third the accustomed costs *(See chart).*

The first shipment aboard the **Methane Pioneer** was not economical nor was it intended to be. The voyage was a test. But success of this first trans-ocean delivery of natural gas in liquid form is already having worldwide reprecussions.

▶ At least two companies are bidding to build gas liquefaction plants in Venezuela (where billions of cubic feet of natural gas is flared each year).

▶ The successful shipment may open the door for Middle East and Venezuelan gas to compete with the domestic natural gas industry in the United States.



DRAMATIC IMPACT of liquefied natural gas on world petroleum market is shown by this graphic comparison of cost of manufactured gas in Britain with that of liquid methane.

The voyage . . . The **Methane Pioneer** is a converted dry cargo vessel jointly owned by the British Gas Council and Constock International Methane, Ltd., the latter a joint venture of Continental Oil Company and The Union Stock Yard and Transit Company of Chicago. The ship's maiden voyage climaxed over five years of research and development by Constock.

How gas is liquified . . . Some 80-90 percent of natural gas is methane, which liquifies at -258° F. When liquified, it reduces to about 1/600 in volume. Constock invested about $5 million in a barge-mounted liquefaction plant and loading terminal in South Louisiana. The plant, which can manufacture some 1500 bbls. of liquid methane daily, utilizes equipment similar to liquid-oxygen units. To lower the temperature of the gas sufficiently for it to liquefy, it is compressed, cooled and expanded across a turbine.

The ship . . . The system used in the experimental tanker consists of five special aluminum tanks installed in insulated holds of the ship within which the liquid methane is carried without pressure at -258° F. The tanks are lined with balsa wood. When the first shipment of liquid gas arrived at its destination, Canvey Island on the Thames River near London, it was transferred to storage tanks subsequent to being vaporized to gas under pressure and delivered to a reforming plant. It was mixed with refinery off gases prior to delivery to consumers in the London area.

Costs of delivery . . . One of the most exciting aspects of the new transportation development is the cost for which gas can be shipped to England from the Gulf of Mexico—within the range of 35 to 50 cents per M.c.f. At present, manufactured gas in the British Isles is selling for $1.61 per M.c.f.

Markets . . . Leading markets for liquefied gas will be Western Europe, Japan and even the United States. Present domestic demand in Western Europe is about a half billion M.c.f. annually, but this could increase to three trillion cubic feet within the next eight years.

Domestic competition . . . Some officials say Venezuelan gas can be liquified and moved by tanker to the northeastern section of the United States more cheaply than domestic gas is moved by pipeline. At least one official predicts that natural gas in liquid form may pose an import problem in as little as ten years.

Lake Erie Operator . . .

(Continued from page 23)

of wells for other Lake Erie operators by Consolidated West's subsidiary, Underwater Gas Developers Limited, drilling costs of company wells were reduced during the year.

Place Gas & Oil Puts Erie's Walpole No. 1 On Stream

Place Gas & Oil Co. Ltd. of Toronto, Ontario, has placed its Walpole No. 1 well in eastern Lake Erie on stream, connecting it with the onshore pipeline gathering system of Union Gas Company of Selkirk, Ontario.

Five commercial gas wells drilled by Place last season have been dedicated to a Union-Place contract, which provides a sale price of 45 cents per 1000 cu. ft. of gas. The gathering system for four other Place wells in the Port Dover area have been assembled, and the wells will go on stream as soon as weather permits.

Lake Maracaibo

55-Mile Pipeline Planned To La Estacada Terminal

Plans are in the making for laying a 55-mi. pipeline from Superior Oil Company's new wells in the middle of Lake Maracaibo to La Estacada loading terminal.

Superior recently bought the terminal from Talon Petroleum C. A. for approximately $1 million.

Wildcat In Lake Maracaibo Will Test New Fault Block

Block 4 in Lake Maracaibo has drawn its first wildcat since last summer. The projected 13,100 ft. test will be drilled into a fault block different from the ones presently producing in the block.

Well 14-X will be drilled in Centro Lago, field 1½ mi. northeast of 2-X pool by the Sohio group, leaseholders of Block 4. The group's most recent field completion produced at the daily rate of 2547 bbls. from the Eocene.

Third Major Oil Discovery Completed On New Acreage

Third big oil find in Lake Maracaibo's Lot 17 has been finaled by Phillips Petroleum Company at a daily flow of 5592 bbls. of oil per day.

Phillips completed the discovery well 1900 ft. northeast of the newest well, and it was good for 6600 bbls. of oil per day. A fourth well is being drilled 9 mi. east of the second strike which produced an initial capacity of 7008 bbls. per day.

Phillips is the operator on the lease for a group rounded out by Ashland Oil and Refining Company, Sunray Mid-Continent Oil Company, Western Natural Gas Company, El Paso Natural Gas Products Company, Kerr-McGee Oil Industries, Inc., Pacific Petroleum Ltd. and Canadian Atlantic Oil Company, Ltd.

Boom Continues On Signal Group's 28,000-Acre Lease

The oil boom is continuing on a 28,000-acre concession in Lake Maracaibo owned by Signal Oil and Gas Company of Venezuela and foreign subsidiaries of Pure Oil Company, Standard Oil Company (Ohio) and Signal Oil and Gas Company.

Signal, the operator, is currently drilling one exploratory well and two development wells. The company's

(Continued on next page)

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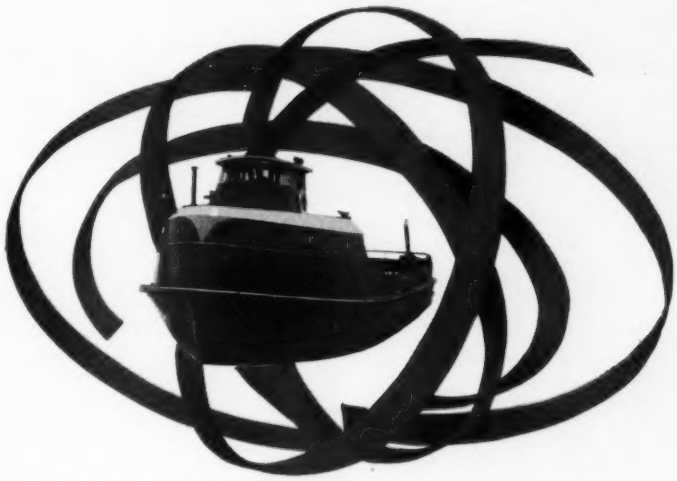

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Boom Continues . . .

(Continued from preceding page)

latest development well, Centro No. 12, flowed 42.5-degree gravity clean oil from lower Eocene sands on a two-hour test. The well is the eleventh to be completed on the lease since the beginning of drilling in May, 1957.

Deepest production comes from lower Eocene "C" sands at 12,500 ft., while other Eocene sands produce at 10,200 ft. Signal shipped its first Venezuelan production from the new marine terminal at Punta de Palmas, near the mouth of the lake, last November.

Mexico

First Marine Oil Production Opened Off Coast Of Mexico

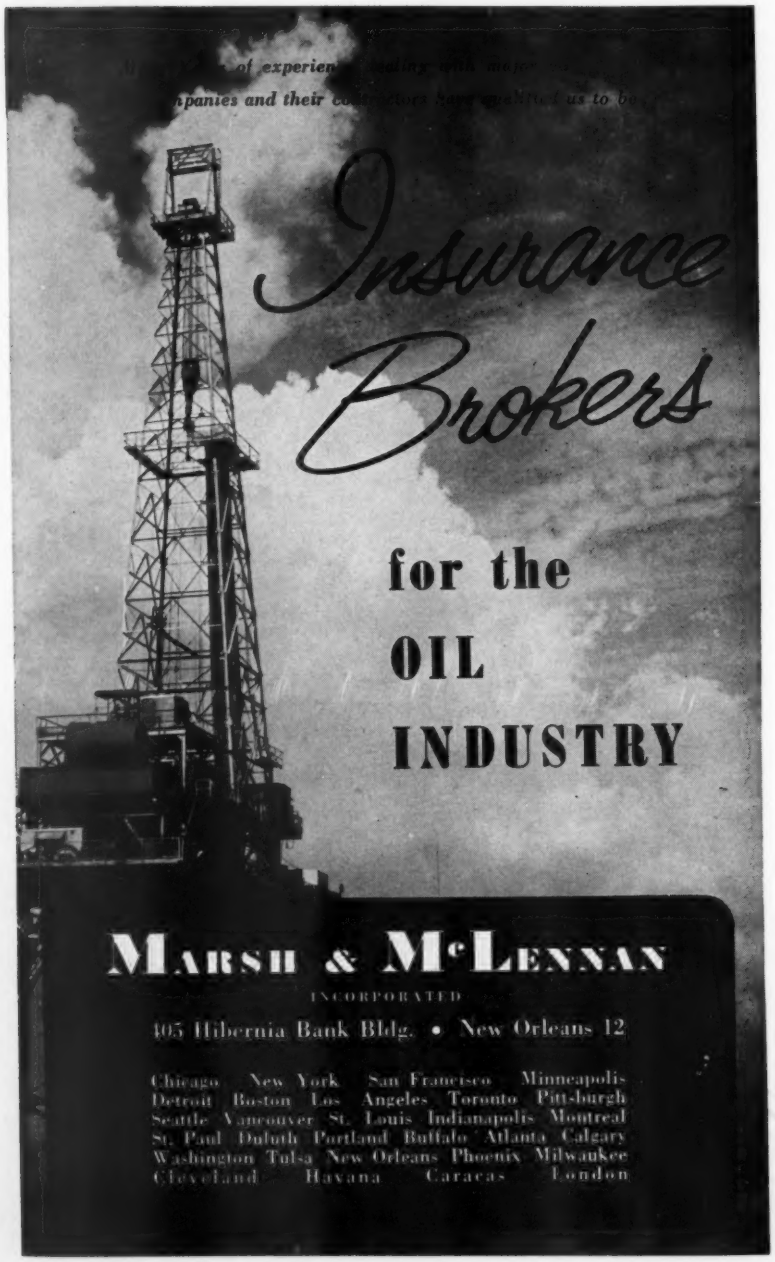
Two wells in the Bay of Campeche have launched Mexico's offshore oil production.

The 112 and 111 Rabon Grande wells were drilled for Pauley Pan American Petroleum Inc., by Ocean Drilling and Exploration Company approximately one-half mi. offshore from Coatzacoalcos, Veracruz.

The exploratory well, No. 112 Rabon Grande, flowed 442 bbls. per day.

The dually completed confirmation well, No. 111 Rabon Grande, yielded more than 400 bbls. per day from each zone. Perforations were at 2416-19 ft. and 2848-62 ft.

Production is from an offshore extension of the Rabon Grande field.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Netherlands

European Branch Formed In Netherlands By Conoco

Continental Oil Company has established a wholly-owned Netherlands subsidiary to operate in Europe.

The firm, to be known as Continental Oil Company (Nederland) N.V., will be located in Rotterdam. J. R. Cowell who was formerly with the company's petrochemical sales staff in New York, will serve as managing director of the new company. The Netherlands branch will promote sales of Conoco's petrochemical and refined products.

Persian Gulf

Japan's Persian Gulf Test To Be Spudded This Spring

The first wildcat test in the Kuwait-Saudi Arabia section of the Persian Gulf Neutral Zone will be spudded early this spring.

On its way to the concession from the Gulf Coast is Reading and Bates Offshore Drilling Company's **C. E. Thornton,** a mobile unit capable of drilling in waters deeper than 100 ft.

Contractor for the drilling operations is International Drilling Company, which will construct extensive shore facilities for housing personnel, storing equipment sufficient for two years operation and for maintenance of equipment.

The 70,000 sq. kilometer lease was acquired by Arabian Oil Company, Ltd. of Tokyo. The company acquired Saudi Arabia's share of the rights with a record breaking 56-44 concession agreement and followed it with an even more radical 57-43 profit split with Kuwait.

Russia Offers 90-10 Split For Iraq Offshore Lease

Most radical profit splitting deal ever offered was reportedly made by Soviet Russia for a small offshore parcel in the Persian Gulf off Iraq. The Russians offered 90 percent of

the profits to Iraq, opposed to the 50-50 split common to the west for oil concessions.

The offer, which had not been acted upon by the Baghdad government at last report, was for a small area which an affiliate of Iraq Petroleum Company gave up last year. At the time it was leased originally, the concession extended to the three-mile limit; however, the seaward boundary of Iraq has since been changed to 10 mi. Added to this is the unsettled status of Iraq's offshore boundaries in relation to Iran and Kuwait, making it difficult to determine the size of the lease.

Arab Countries Proposing $560 Million Oil Pipeline

Rising oil production in the Persian Gulf area of the Middle East may lead Arab countries to build a $560 million pipeline from the Persian Gulf to the Mediterranean.

The proposed big-inch system will probably be discussed before the oil conference in Cairo this month, and if it is approved, will be presented to each producing and transit country for approval. Present plans call for feeder lines from Kuwait, Iraq and Saudi Arabia to converge into a main line running to a terminal in Syria or Lebanon.

The line would probably be Arab-owned, since that would offer less likelihood of its being sabotaged.

Texas

Transco Files Statement For $35 Million Bond Sale

In line with a planned $165,700,000 construction and expansion project, Transcontinental Gas Pipe Line Corporation has filed a statement for a $35 million bond sale.

The registration statement filed with the Securities and Exchange Commission covers the proposed sale of first mortgage pipe line bonds due 1979. The issue will be underwritten by a group headed by White, Weld & Company and Stone & Webster Securities Corporation.

Transco's proposed expansion program includes the laying of 564 mi. of lines in southern Louisiana to tap new gas reserves. Another phase is completion of a line from Louisiana to New York and the beginning of a third parallel line.

Washington

Oilmen Expect Leases Will Be Offered Off La., Fla.

Oilmen are expecting the high premiums paid for offshore leases in the recent sale by Louisiana to offer leases between the three-mi. and 10½-mi. limits off both Louisiana and Florida.

Reports have come forth that the federal government is planning such a sale. Louisiana's first offshore lease sale in nearly three years recently netted the state $43.7 million for a total of 66,937 submerged acres.

Supreme Court Will Hear Tidelands Case Oct. 12

Once again, the endless Tidelands case is scheduled to come up for judicial reckoning.

The case was originally scheduled to be heard last October 12; how-

(Continued on page 46)

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An Economical Way To Collect And Store

By CAPT. R. B. LANK, JR.
U.S. Coast Guard (Ret.)
69 B Forest Drive, Springfield, N.J.

It appears that capital expenditure involved in the collecting, separation and storage of oil from offshore wells can be materially reduced by the utilization of a new and different concept proposed for this field of endeavor.

This concept takes advantage of the fact that most oil is lighter than water and will float thereon and can be entrapped on the surface of such water to any desired depth, by simply preventing the oil from spreading. A device to accomplish this end requires only a vertical enclosure with sufficient buoyancy chambers to keep afloat. No bottom or top is fundamentally necessary. The principles involved are all illustrated diagrammatically by **Fig. 1 and 2**, showing how a vessel or part thereof (a T-2 tanker midbody and complete ship is shown) may be utilized.

Consider all compartments open to the sea on the bottom with the buoyancy compartments tight and of sufficient size to provide freeboard and stability. The ship would then float as shown in Section "A-A" of **Fig. 1.** By pouring oil into the top of any compartment water would be displaced out of the bottom in the manner shown progressively by Section "B-B" and "C-C" until the compartment was completely full of oil and devoid of water as per Section "D-D".

The principle involved can be compared to adding oil to the longer leg of "U" tube filled with water. As oil is added, a corresponding weight of water will be displaced keeping the two legs balanced as depicted in **Fig. 1.** The volume of oil however, is greater than water for the same weight and consequently the level of the oil inside the ship or tube will rise above the external water line and/or the shorter tube.

The height of oil above the water line and consequently the amount in any compartment can readily be measured by a dip-stick in the same way the level of oil is measured in an automobile crankcase. Conversely, when emptying a compartment, the oil can be removed by a suction placed just above the external waterline. The suction line can be suitably baffled to insure that water would not be entrained when completely emptying any compartment.

The economies inherent in the use of this so called "constant draft tank vessel" are numerous and sizeable.

Since the loads that may be imposed hydrostatically are almost insignificant, the structure of the vessel can be lighter than that in a conventional ship except in way of

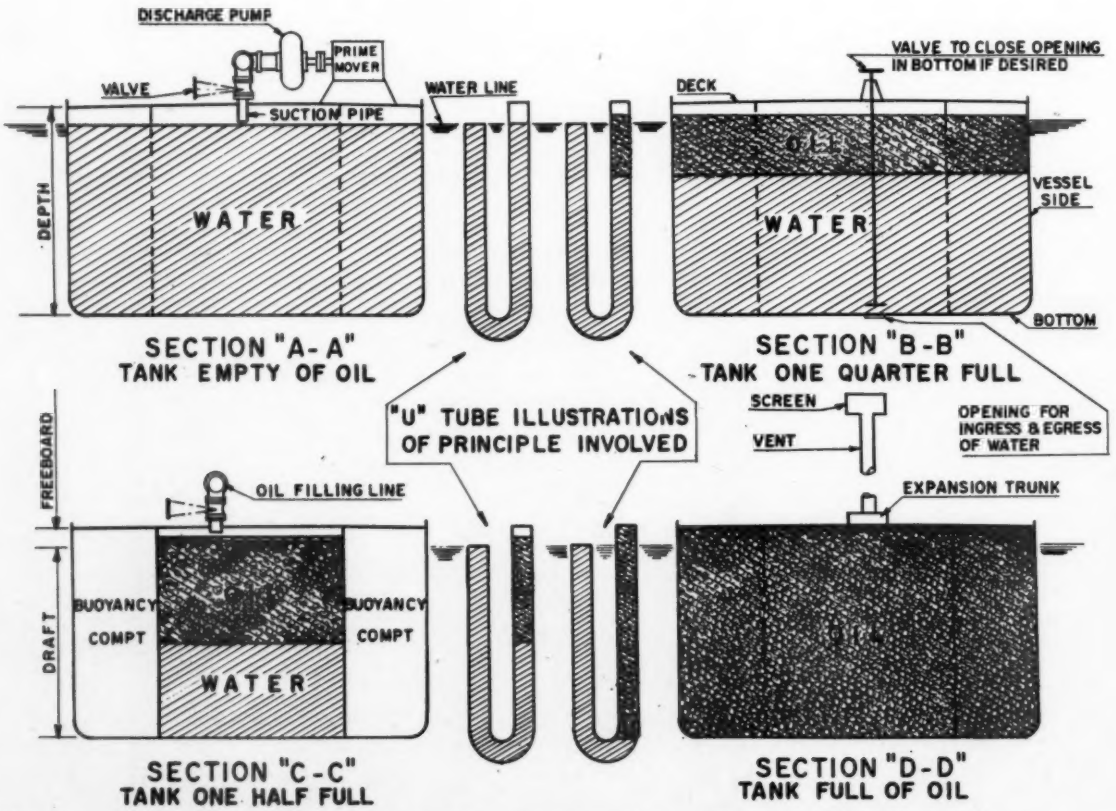

FIGURE 1—DIAGRAM of "U" tube principal involved in vessel for collecting and storing offshore oil.

CONVENTIONAL STORAGE AND COLLECTION BARGE as converted from a T-2 midbody. Vessel is being towed from shipyard to station in the oil fields of Lake Maracaibo. The author assisted in the development of this and conversions of similar nature.

bouyancy compartments. Consequently, ships may be obtained for scrap value and readily converted, or if new, scantlings will be much less than in conventional vessels. Old tankers with leaking bottoms and bulkheads could readily fulfill this mission. As mentioned before, it is only necessary to insure strength and tightness in the buoyancy compartments.

In the event the vessel is to be moored where a strong current exists, or is to be moved when full of oil, closures on bottom may be necessary as shown in Section "B-B" to prevent spillage. Otherwise, closures are only required if it is necessary to reduce draft in event docking requires that draft be lessened by emptying certain compartments.

As the bottom is open to the sea, contaminants in the oil (water, sand, etc.) will settle out and automatically be disposed of. Likewise, since large vents can be mounted on the tops of expansion trunks without need for pressure limiting devices, such a vessel will serve the same function as a flow barge which, if large enough, will have unlimited capacity. Entrained gas can be metered if desired. It should be noted, however, that the compartments are always nearly filled with liquid, meaning that the gaseous contents of an empty tank will not be discharged when filling as with conventional methods.

Capt. R. B. Lank, Jr., a graduate of Webb Institute of Naval Architecture, saw 30 years of service with the U.S. Coast Guard. During World War II, he served as Chief of the Construction and Repair Division, and received a Navy Commendation Ribbon for outstanding performance of duty.

Capt. Lank joined Philip L. Rhodes, naval architects and marine engineers, in 1954, and has assisted in the design of equipment for marine oil operators throughout the world.

By taking oil out of the top of a tank with a small suction head, all pumps and piping can be mounted on the open deck, making for minimum installation, operating and upkeep cost, while at the same time eliminating the hazard and cost of enclosed pump rooms.

There are other advantages attendant upon a vessel which floats at a constant draft. For instance, the freeboard is small, making the need for companion ladders, floats, etc. unnecessary. Mooring problems likewise are not as great as with a conventional ship since the difference in draft and wind effect are not factors to be reckoned with. Last, but not least, is the fact that corrosion from galvanic sources, both on the inside and outside, can be eliminated almost entirely by use of suitable anodes. Since only the exterior of the deck and a small portion of each side is exposed to atmospheric corrosion, considerable savings in upkeep should accrue.

Although the description herein given was developed to apply to vessels moored on location, certain of the advantages mentioned can be secured by utilization of the basic principles to vessels carrying low gravity oils.

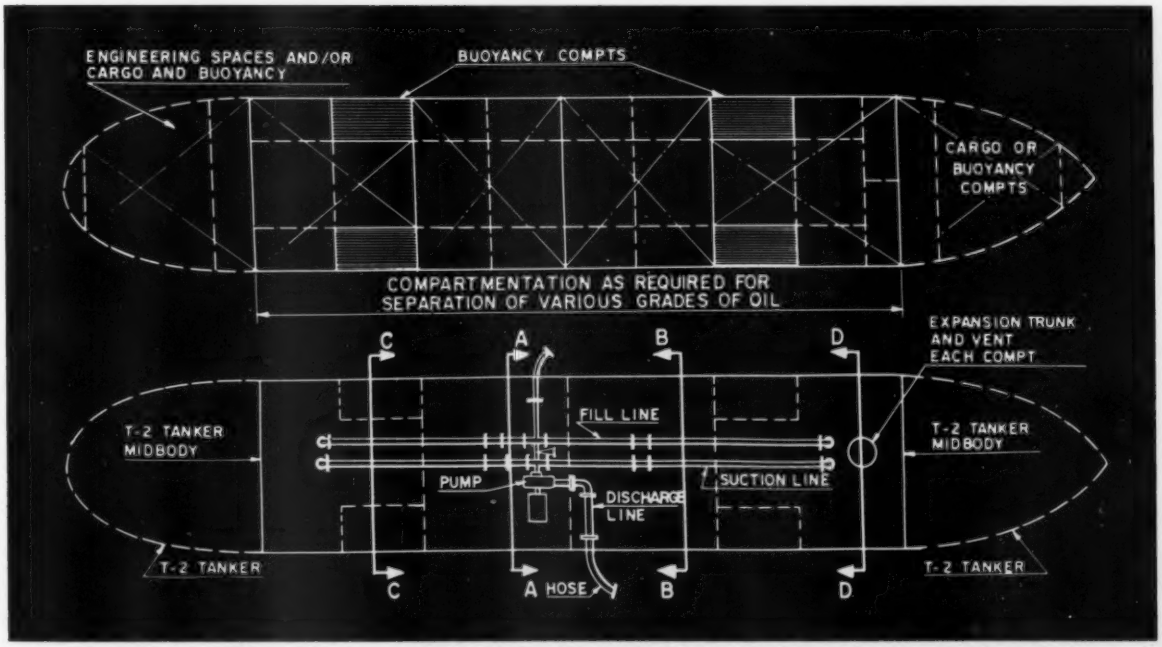

FIGURE 2—PLAN VIEW of holds and deck. Compartmentation is provided for separation of various grades of oil.

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Mobile Units, Tenders, And Self-Contained Platforms Gulf Coast Area

OWNER	NAME	WATER DEPTH	PRESENT STATUS
Barnwell Offshore, Inc. Self-elevating 176′ x 176′ x 152′ with three 145′ legs	"Mister Cap"	to 100′	Drilling for Sinclair-Sohio, Block 56, Vermilion Area
Blue Water Drilling Corp. Submersible	Rig No. 1	70′	Drilling for Shell Oil Co., Block 128, Eugene Island Area
The California Company Submersible 11′ x 90′ x 156′ with four 3′ x 10′ x 35′ pontoons	S-45		Bay Marchard, Louisiana, Rowan Drilling Co.
The California Company Submersible 12′ x 90′ x 190′, with four 4′ x 24′ x 50′ pontoons	S-55		Bay Marchard, Louisiana, Noble Drilling Co.
Coastal-Marine Drilling and Construction Corp. Submersible	Coastal Mariner No. 2		Completed well in Carancahua Bay. Now idle
Continental Marine Exploration Co. Submersible 230′ x 99′ with 54′ between fixed hulls	"M & H Drilling Platform No. 12"	To 30′	Test location State Tract 128A
Coral Drilling Company Submersible 180′ x 151′ x 84′ with four pontoons	"Mr. Arthur"	to 70′	Bay Marchand, California Co.
Deepwater Exploration Co. Self-elevating overall 121′ x 118	"Deepwater No. 2"		Completely salvaged unit at LeTourneau, Vicksburg yard
Delta Marine Drilling Co. Submersible	"Chris Zeppa"	To 35′	Drilling for Gulf Oil Corp. State Lease "PP" 192, West Delta Area Stacked
Dixilyn Drilling Corp. Self-elevating 194′ x 152′ overall. Three 175′ legs	"Julie Ann"	To 105′	Drilling for Shell Oil Co., Block 163, Vermilion Area
C. G. Glasscock Drilling Co. Self-elevating Deck 258′ x 104′, pad 200′ x 180′ with four 10′ dia. columns	"Mr. Gus II"	45′	Drilling for CATC West Delta, Block 69
Gulf Marine Drilling, Inc. Submersible	Rig No. 1	22′	Drilling for Gulf Oil Corp. Block 24, West Delta, Well No. 1
Kerr-McGee Oil Ind., Inc. Submersible 13′ x 54′ x 160′ with two 13′ x 14′ x 110′ pontoons	Rig 40	to 22′	Drilling for Gulf Oil Corp., Vermilion Bay
Kerr-McGee Oil Ind., Inc. Submersible 13½′ x 72′ x 140′ with two 13½′ x 13½′ x 140′ pontoons	Rig 44	To 40′	Drilling for self et al, Block 28, Ship Shoal Area
Kerr-McGee Oil Ind., Inc. Submersible 142′ x 69′ x 13′6″, with two 10′ x 11′ x 146′ pontoons	Rig 45	To 35′	Moving to Key West, Fla., for Gulf Oil Corp.
Kerr-McGee Oil Ind., Inc. Submersible	Rig 46	To 70′	Drilling for Gulf Oil Corp., Block 21, South Timbalier Area

OWNER	NAME	WATER DEPTH	PRESENT STATUS
Kerr-McGee Oil Ind., Inc. Submersible	Rig 47	To 70'	Drilling for Standard Oil Co. of Texas. High Island area
Louisiana-Delta Offshore Corp. Submersible 180' x 151' x 12'	Drill Barge Louisiana	To 65'	Drilling for Shell Oil Co.
Louisiana-Delta Offshore Corp. Submersible 156' x 90'	Drill Barge Delta	To 25'	Drilling for Humble Oil & Refining Co., Block 25 Field, West Delta Area
Magnolia Petroleum Co. (Drill barge on piling)	Rig 52		Drilling in Cote Blanche Bay, St. Mary Parish
Movible Offsore Co. Submersible 200' x 146' x 67'	Movible No. 3	To 45'	Drilling for John W. Mecom, Block 45, West Cameron Area
Movible Offshore Co. Submersible 201' x 211' x 110'	"Movible No. 2"	To 80'	Drilling for John W. Mecom, West Cameron Area
Noble Barge Co. Twin-hull submersible 217' x 100'	"Lloyd Noble S-66"	To 100'	Being built at Avondale Marine Ways
Ocean Drilling & Exploration Company Submersible 200' x 300' x 98'	"El Dorado"	To 70'	Drilling for CIMA, Gulf of Campeche, Mexico
Ocean Drilling & Exploration Company Submersible 132' x 220' x 58'	"Mr. Charlie"	40'	Drilling for self, Block 90, Eugene Island Area
Ocean Drilling & Exploration Company Submersible 120' x 180' x 49'	"John Hayward"	30'	Drilling for California Co., Block 93, Eugene Island Area
Ocean Drilling & Exploration Company Submersible 200' x 300' x 93'	"Margaret"	To 60'	Stacked
Ocean Drilling & Exploration Company Submersible 120' x 180' x 50'	"St. Louis"		Drilling for Shell Oil Co., Block 27, South Pass Area
The Offshore Company Self-elevating 81½' x 70' x 203' with twelve 6' dia. caissons	Mobile Unit No. 51		Bayou Bouef, Louisiana
The Offshore Company Self-elevating 131½' x 117' x 220' with fourteen 6' dia. caissons	Mobile Unit No. 52		Drilling for Magnolia Petroleum, Ship Shoal Block 119
The Offshore Company Submersible 12' x 74' x 200' with four 6' dia. caissons	Mobile Unit No. 53		Drilling for Pure Oil Co. Block 20, S. Timbalier Area
The Offshore Company Self-elevating 200' x 104' x 15' with eight 12' dia. towers	Mobile Unit No. 54		Drilling for Texaco and Pan Am., Eugene Island Block 209
The Offshore Company Self-elevating 200' x 104' x 15' with eight 12' dia. towers	Mobile Unit No. 55		Drilling for Shell Oil, West Cameron Block 253
Penrod Drilling Company Submersible 196' x 108'	Rig 50	44'	Eugene Island Area
Penrod Drilling Company Submersible 150' x 190'	Rig 51	To 70'	Grand Isle Area
Penrod Drilling Company Submersible 198' x 174'	Rig 52	100'	Eugene Island Area

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FOREIGN and DOMESTIC MARKETS

OWNER	NAME	WATER DEPTH	PRESENT STATUS
Placid Oil Co. Twin submersible hulls, each 72′ x 178′	Petrel	To 100′	Eugene Island Area
Reading & Bates Offshore Drilling Company Self-elevating	"C. E. Thornton"	To 110′	Under tow to Persian Gulf
Rimrock Tidelands, Inc. Submersible	"Rimtide"		E. Bay Plaquemines Parish, La.
Sea Drilling Corp. Submersible	"Seadrill 2"	30′	Waiting on location
Southeastern Drilling Corp. Submersible 11′ x 90′ x 156′ with four pontoons	Rig 22, Barge 8		Drilling for Texas Co., S. W. Marsh Island prospect, State Lease 340, OCS—0310, Well No. 3
Union Producing Co. Submersible 160′ x 190′	Unnamed	To 76′	Under construction at Todd Shipyards Corp., Houston, Texas
Universal Drilling Company Self-elevating	"Mr. Louie"	To 130′	Being outfitted in New Orleans
Zapata Off-Shore Company Self-elevating. 194′ x 152′ overall. Three 145′ legs	"Vinegar-roon"	To 80′	CATA Well #1, Block 71, East Cameron Area
Zapata Off-Shore Company Self-elevating. 20′ x 80′ x 140′, with three triangular legs	"Scorpion"		On location Cay Sal Bank, Bahamas

Drilling Tenders

An-Son Offshore Drilling Co.	"Carl B. Anderson"		Drilling for CATC
The California Company Converted LST, 328′ x 50′	S-21	25′	Bay Marchand, Louisiana, Noble Drilling Co.
The California Company Converted LST, 328′ x 50′	S-22	49′	Bay Marchand, Louisiana, Loffland Brothers
The California Company Converted LST, 328′ x 50′	S-23		Being mothballed
The California Company LST, 328′ x 50′	S-24	37′	West Delta Area, Louisiana, Noble Drilling Co.
The California Company LST, 328′ x 50′	S-25		Bay Marchand, Louisiana Loffland Bros.
The California Company LST, 328′ x 50′	S-26		Standby, Venice, Louisiana. Loffland Bros. rig
Coastal-Marine Drilling and Construction Corp. New tender, 272′ x 56′	Howard S. Cole Jr. Coastal-Mariner No. 1		Sold to Pan American International for use in Persian Gulf
CATC Group New tender, 260′ x 54′	"J. C. Craig"	90′	Eugene Island, Block 208
CATC Group New tender, 260′ x 54′	"Carle Sharp"	101′	Ship Shoal, Block 199
CATC Group New tender, 260′ x 54′	"Ernie Miller"	50′	West Delta, Block 45
CATC Group New tender, 260′ x 54′	"Jack Cleverley"		Drydock
Deepwater Exploration Co. Converted LST, 328′ x 50′	"Deepwater No. 1"		Block 174, Ship Shoal area

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OWNER	NAME	WATER DEPTH	PRESENT STATUS
Delta Marine Drilling Co. Converted LST, 326' x 50'	"Joseph Zeppa"		Stacked
Gulf Oil Corporation New tender	"Dolphin"		Completed placed in moth ball fleet at Orange, Tex., engines pickled, and rig stacked
Gulf Oil Corporation Converted LST, 328' x 50'	"Eagle"		Rig stacked at Morgan City, Louisiana
Gulf Oil Corporation New tender, 272' x 60'	"Pelican"		Block 130, S. Timbalier area, Salt Dome Prod. Co.
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-1		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-2		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-3		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-4		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-5		At Orange, Texas for storage
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-6		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-7		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-8		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-9		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-10		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-11		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-12		Standing by
Kerr-McGee Oil Ind., Inc. Converted YF, 260' x 48'	"Kermac I" Rig 16		Waiting on location
Kerr-McGee Oil Ind. Inc. New Tender, 250' x 50'	"Kermac II" Rig 43		Waiting on location
Kerr-McGee Oil Ind. Inc. New Tender, 250' x 50'	"Kermac III" Rig 48		Waiting on location
Kerr-McGee Oil Ind., Inc. Converted YF, 260' x 48'	"Frank Phillips" Rig 39		Waiting on location
Llano Drilling Company New tender, 260' x 54'	"Clayton G. Dorn"		Under bareboat charter to Reading & Bates Offshore Drilling Co.
Magnolia Petroleum Co. Converted YF	"Gulf Coast Barge No. 2"		Out of Service
MCN Group Converted YF	MDT-1		Block 119, Eugene Island Area, Well C-6 drilling
MCN Group Converted YF	MDT-2		Out of Service
MCN Group Converted YF	MDT-3		Out of Service
MCN Group Converted YF	MDT-4		Out of Service
MCN Group Converted YF	MDT-5		Out of Service
MCN Group Converted YF	MDT-6		Out of Service
MCN Group Converted YF	MDT-7		Out of Service
Pan American Petroleum Corp. Converted LST, 328' x 50'	"Pan American 50"		Orange, Texas

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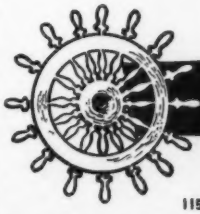

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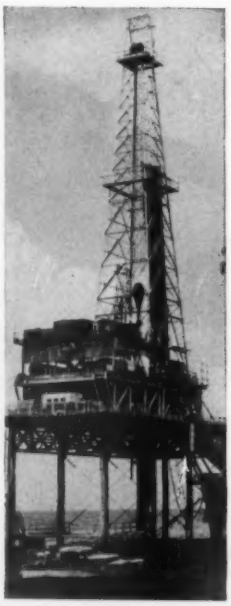

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OWNER	NAME	WATER DEPTH	PRESENT STATUS
Phillips Petroleum Company Converted YF, 260′ x 48′	"K. S. Adams" Rig 40		Inactive
Reading & Bates Offshore Drilling Company	"J. W. Bates"		Under tow to Persian Gulf
Reading & Bates Offshore Drilling Company	"George M. Reading	71′	Drilling in Block 120, Vermilion Area for CATC
Reading & Bates Offshore Drilling Company	"J. C. Craig"		Drilling in Block 208 Eugene Island Area for CATC
Reading & Bates Offshore Drilling Company	"Clayton G. Dorn"		Drilling in Block 208, Eugene Island Area for CATC
Southeastern Drilling Corp. Converted YF	Rig 12 Barge 9		Shut down, Industrial Canal, New Orleans
Zapata Off-Shore Company Floating drill barge	"Nola No. 1"		Drilling in Block 84, W. Delta Area

Self-Contained Platforms

COMPANY	DESCRIPTION	YEAR BUILT	LOCATION	WATER DEPTH
Brewster Bartle Off-Shore Co.			Block 30, West Delta	50′
CATC Group	110′ x 146′	1956	Block 45, West Delta	50′
CATC Group	110′ x 146′	1957	Block 47, Grand Isle	88′
Dixilyn Drilling Corp. Rig #7	120′ x 145′	1956	Rig removed and in storage at Dupont's Bayou Bouef yard	
Gulf Marine Drilling, Inc. Rig #2			Bayou Bouef, awaiting location	
Gulf Oil Corporation	40′ x 100′	1957	Rig Stacked at Morgan City, La.	
Humble Oil & Refg. Co. Rig #50	78′ x 200′	1956	Block 16 Field, "J" Platform, Grand Isle Area	50′
Humble Oil & Refg. Co. Rig #54		1958	Shutdown	
Mecom Petroleums	82′ x 193′	1948	Rig removed from platform	34′
Phillips Petroleum Co.	85′ x 140′	1955	Block 184, Eugene Island Area, vacated, platform remains	84′
Phillips Petroleum Co.	88′9″ x 140′	1955	Block 129-A, Eugene Island Area, platform inactive	52′
Phillips Petroleum Co.	88′9″ x 140′	1956	Block 172, Eugene Island Area, vacated platform	77′
Phillips Petroleum Co.	88′9″ x 140′	1956	Block 191, Eugene Island Area, platform inactive	81′
Phillips Petroleum Co.	88′9″ x 140′	1957	Block 129, Eugene Island Area, platform inactive	57′
Pure Oil Company Converted LST	328′ x 50′	1958	Orange, Texas	
Pure Oil Company	52′ x 106 with 51′ x 82′ pipe rack	1957	Well completed, rig removed	72′
Shell Oil Company	55′ x 110′	1958	Block 176, Eugene Island Area	86′
Sinclair Oil & Gas Co.	118′ x 142′	1957	Block 175, Eugene Island area (wells shut in)	85′
Sinclair Oil & Gas Co.	118′ x 142′		In storage at McDermott Bayou Bouef yard	
Sinclair Oil & Gas Co.	80′ x 180′	1955	Block 15, South Timbailer Area, (well shut in)	7′
The Superior Oil Co.	96′ x 225′	1958	Drilling B-3, Block 76, Vermilion Area	
Union Oil Co. of California			B-1, Block 76, Vermillion Area, Southeastern Drilling Corp., Rig 7	

News from the SHIPYARDS

SPEEDY CREWBOAT recently delivered to H.O.M.E. Boat Rental Service by Equitable Equipment Company, Inc. seats up to 40 passengers, attained speeds up to 26 mph in its sea trials.

Equitable Equipment Delivers Sleek 40-Passenger Crewboat

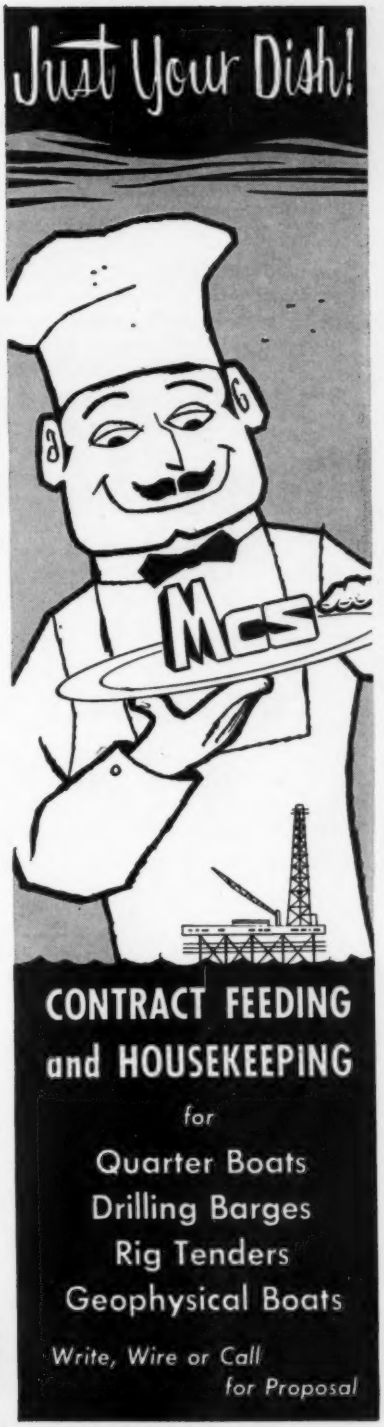
A sleek new 40-passenger crewboat recently sped across Lake Pontchartrain in South Louisiana at speeds up to 26 mph.

Following her sea trials, the **Wildfire** was delivered to H.O.M.E. Boat Rental Service of Golden Meadows, Louisiana, which will contract it to offshore companies drilling for oil in the Gulf of Mexico.

The speedy all-steel craft, built by Equitable Equipment Company, Inc. of New Orleans, is air conditioned

(Continued on next page)

FIRST CREWBOAT of its kind to be powered by two 12V-71 General Motors diesel engines, which were supplied by George Engine Company, Inc., of Harvey, Louisiana, is the 55-ft. NITA, currently servicing offshore drilling and pipeline crews off the Louisiana coast. Installed as a matched pair, the V-diesels turn 32-in. by 33-in. wheels through 2-1 reduction gears. The NITA, which was built by Sewart Seacraft, Inc., of Berwick, Louisiana, has a top speed of over 26 mph.



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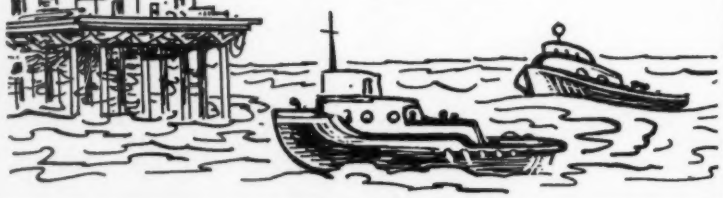

VENEZUELAN OPERATIONS:

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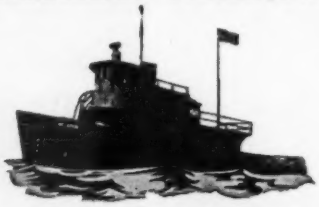

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Shipyards . . .

(Continued from preceding page)

throughout to afford the offshore operators the utmost in comfort while in transit. Its first job will be working for the California Company out of Leeville, Louisiana.

The **Wildfire** is built in accordance with American Bureau of Shipping and U. S. Coast Guard requirements for carrying passengers for hire. Its dimensions are: length overall 53 ft., 9 in; beam overall 15 ft.; depth molded 7 ft.; draft molded 3 ft., 11 in. She is twin screw, powered by two General Motors turbo super-charged 6-110 diesel engines (350 hp each, maximum rating).

A Raytheon model 1500 radar, Apelco radio and a compact modern galley are aboard.

Equitable Equipment Company, Inc. of New Orleans has built more than 500 crewboats ranging in size from 32 ft. to 54 ft. which are being used primarily by the oil industry around the world.

Flexible Barge Passes Test For Transporting Petroleum

A flexible nylon and synthetic rubber bag, which recently passed the test for marine movement of petroleum products, may have applications offshore.

Since hose pipe connections can be attached, the sausage type barge has been recommended as a means of storage for oil at sea.

One of the new type barges, made by Dracone Developments Ltd. of London, recently was filled with 10,000 gal. of kerosene and towed behind a launch from Esso Petroleum Co., Ltd.'s facility at Fawley to the Island of Wight about 10 mi. away. For the return trip it was filled with carbon dioxide.

National Research Development Corporation is trying to adapt the barge to river usage in areas such as West Africa.

H. Newton Whittelsey Designs Trim Vessels Of The Future

Some of the modern new ship designs that will be seen on the seas in the future have recently come off the drawing boards of H. Newton Whittelsey, Inc. of New York, naval architects and engineers.

Among other models illustrated in an attractive company booklet is a passenger vessel conversion design for Catalina Steamship Company and a passenger-cargo conversion design for the U. S. Maritime Commission.

New Firm's Specialty To Be Logging And Core Analysis

A new well logging and core analysis firm, Rig Time Inc., was incorporated recently with W. W. Bynum of Shreveport, president, and Glenn Clark of Jackson, Mississippi, vice president. Both were formerly with Hycalog, Inc. of Shreveport.

The main business office will be located in the new Petroleum Tower Building in Shreveport. Operational offices, shops, and core analysis laboratory will be located in Jackson, Mississippi.

Operations are under way in Louisiana and Mississippi and plans are for expansion into other oil producing areas. New types of logging equipment, incorporating innovations developed by Bynum and Clark, are in use, and additional equipment is on order for delivery in the near future, Bynum said.

Rig Time plans to incorporate gas analysis instruments using the chromatograph principle for quantitative gas component analysis.

Lee C. Moore Selects Rigney As Field Service Manager

The appointment of Ray T. Rigney as field service manager has been announced by Lee C. Moore Corporation of Tulsa, Oklahoma.

Rigney

Assistant plant superintendent for eight years, Rigney will now direct all field service operations and personnel. He will work closely with customers on programs of maintenance and maximum safety related to the erection and use of Lee C. Moore equipment throughout the world. He will also make periodic inspection tours to find ways of increasing the efficiency of maintenance and service.

Gray, Cochrane Join Forces As Petroleum Consultants

John N. Gray and Wallace H. Cochrane have formed the Gray-Cochrane Corporation, Petroleum Consultants with offices in Denver, Colorado.

Gray resigned as district superintendent in eastern Venezuela after 21 years with Sinclair Venezuelan Oil Company. Cochrane has been an independent geological consultant for several years in Denver.

George Engine Co. Displays New Lightweight Diesels

George Engine Company, the world's largest distributor of General Motors marine diesel engines, was chosen to display a revolutionary new series of lightweight diesels in New Orleans recently.

Several of the new engines were designed specifically to meet the needs of Louisiana industries, and engineering prototypes have been undergoing secret tests on the Gulf Coast for the past year.

To display the eight new basic GM "V" and "in-line" engines, a special exhibit created for the New York Boat Show was brought to New Orleans. Valued at more than $100,000, the display was on view at the New Orleans showrooms of George Engine.

The entire GM diesel line, which ranges in power from 20 to 1650 hp, operates on the efficient "2-cycle" principle. This means the engine produces power on every piston downstroke instead of on every other downstroke as in a four-cycle engine. Thus, two-cycle diesels are substantially smaller and lighter than comparable four-cycle units.

George Engine has established special facilities and trained personnel for installation of the new engines. Also, a parts and accessories center was set up at company headquarters in Harvey.

Tschirley Named Sales Head Of New Drilling Mud Firm

Norman K. Tschirley will be sales director of a new corporation owned by Baroid Division National Lead Company and the Maffei brothers of Italy.

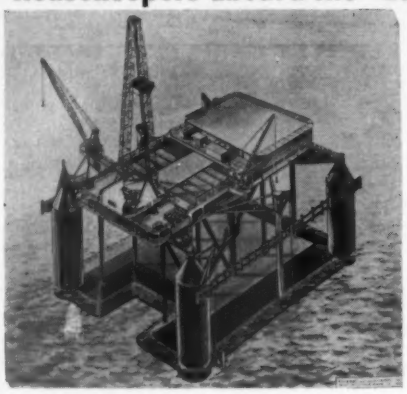
Tschirley

The new company, Baroid-Maffei, S.p.A., which is headquartered in Milan, Italy, will supply drilling mud products to the Mediterranean and Middle East areas includ-

(Continued on next page)

OPEN HOUSE for Continental-Emsco Company's enlarged plant in Garden Villas area of Houston last month was observed by over 1000 visiting oilmen and defense officials. Plant area under cover was increased from 4½ to nearly eight acres and the plant area was increased from 66 to 77 acres at a total cost of $3 million.

Housekeepers aboard the "Louisiana Offshore # 1"



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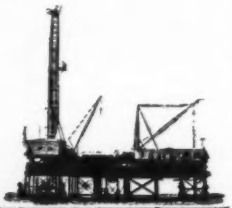

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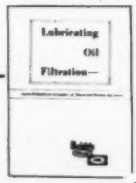

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Service Personalities . . .

(Continued from preceding page)

ing those countries bordering on the Persian Gulf.

Tschirley, a member of the Baroid staff since 1949, became Baroid's assistant chief mud engineer in 1957. He was graduated from Grinnell College in Iowa in 1940 with a B.A. degree in chemistry and mathamatics.

Western Geophysical Company Appoints Walling President

Dean Walling has been named president of Western Geophysical Company. He replaces Henry Salvatori who has become chairman of the board of directors.

Walling

Prior to accepting the new position, Walling was executive vice president and general manager, a post he had held since 1938. His experience began with Western when he was named party chief in California on the first crew organized by Western. He later served as supervisor in California, and in 1936 he became general supervisor of the Mid-Continent, Rocky Mountain and Gulf Coast operations.

Tate And Gray Will Manage Two Major SIE Divisions

Joseph B. Tate has been selected manager of the Military Electronics Division for Southwestern Industrial Electronics Company.

Appointed manager of SIE's Control Division is Rex B. Gray. He will be responsible for the sales, service and market areas of the Control Division and will select and administer production of new systems and instruments.

Tate, who will be in charge of development of military electronic apparatus and instrumentation for SIE, spent the last two and a half years as manager of the electronic and ultrasonic department of the Curtiss Wright Research Division engaged in research on instruments, sonic devices, range measuring systems and instruments.

Prior to accepting his new post, Gray was associated with Texas Apparatus Company which he founded in 1954. He also had ten years experience in various phases of management in General Electric Company.

Grease Gun In Wrench Halts Valve Repair

A new combination plug valve wrench and grease gun may be the stitch in time for refining and petrochemical plants where valve repair can very quickly hit the hundred thousand dollar mark.

Developed by Design Engineer Ralph L. Kerr of Columbus, Texas, the Kerr Lube-Wrench has been tested on various plants, which have never reported a valve leak where it was used.

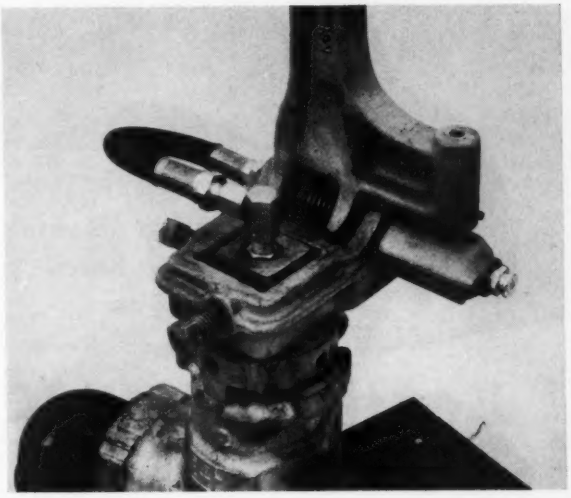
The new device hits at the root of most valve failures —neglect by employes to grease valves as often as needed.

Attached to the valve stem like any other type of grease gun, the Lube Wrench is designed so that the handle is pivoted until a spring holds it at 90 degrees from its operating position.

When the handle is pulled down to operate the valve, a pawl on the handle turns a grease cap in 90 degrees, pushing a predetermined amount of grease into the plug seat of the valve.

One of the most important features is that once the grease cap is screwed in all the way, the operator cannot lower the handle unless he releases the pawl—a constant reminder to refill.

The Lube-Wrench, which can build up to 30,000 pounds psi., permits up to 150 operations of the valve between refills. It can be installed in five minutes using



a pair of pliars with the pressure on or off. When the operator wants to give the valve more grease, he works the handle up and down.

For further information write **Kerr Lube-Wrench, P. O. Box 608, Columbus, Texas.**

New Drill Collar Ups Penetration 35 Percent

In over 200 field tests a new hydraulic drill collar has registered increased rates of penetration and decreased bit wear in hard formations.

Results obtained with the new drilling tool, called the Grant Fluidrill, are reported in Bulletin No. 67 available from Grant Oil Tool Company.

Located between the drill collars and the bit, Grant Fluidrill is, in effect, a bottom-hole automatic driller maintaining a constant weight on the bit and eliminating the vibrations which might harm the string or surface equipment.

On one test made by the same crew on a 40-acre tract using the same equipment under the same conditions, drilling rate for the Fluidrill was 8.52 ft. per hour compared to 6.31 ft. per hour for the conventional string. For further information write **Grant Oil Tool Company, 2042 East Vernon Avenue, Los Angeles 58, California.**

Automatic Shutoff Controls Flowing Wells

A new inside blowout preventer and fully automatic control system takes over in flowing wells when flowlines or surface fittings are damaged or broken.

According to a spokesman of Hydril Company, the Hydril Well Guard operates around the clock in any weather and virtually without attention. It automatically senses danger and reacts instantly to shut in the flow at a predetermined safe subsurface point.

The well guard consists of two compact units: the weatherproof controller, normally positioned at or near the wellhead, and the tubing safety valve installed in the tubing string at any desired point.

For further information write **Hydril Company, 714 W. Olympic Blvd., Los Angeles, California.**

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New Level Control Has No Moving Parts

A new transitorized level control, which has no moving parts, can be wired to actuate pumps, valves and failure warnings or for remote reading of level intervals.

The Liquisonic is operated by ultra-sonic waves transmitted and received by ceramic-glazed transducers. These crystal transducers are mounted at the ends of two Taflon probes on the detector head. When any liquid, slurry or granular solid intervenes between the probes, a resulting change in signal strength immediately actuates a snap-acting control.

Accuracy is rated at .01 in., and the manufacturer states that the unit has been field-tested to more than 10,000 cycles without any form of failure or loss of accuracy.

For further information write Custom Controls Manufacturing Company, 220 East Fifth St., Odessa, Texas.

Unit Gives Maximum Distillate Recovery

A new package type separation system designed especially for producing high ratio gas-distillate wells for maximum economic distillate recovery has been developed by Union Tank Division, Butler Manufacturing Company. The system, which has been named R-Tic-Cycle, is especially adaptable to wells that are produced at variable rates.

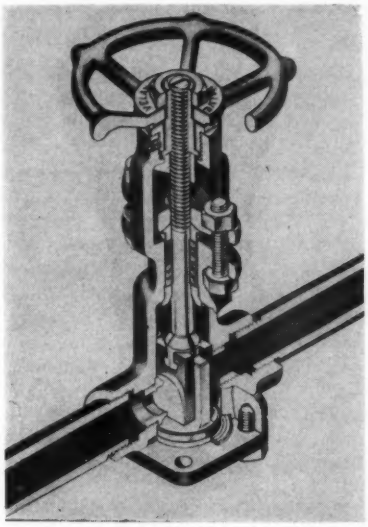
The completely skid mounted unit utilizes steam, furnished by a steam generator, to heat separated liquids. This allows separation under low, hydrate-forming temperatures with increasing distillate recovery rates.

Steam flow to the heating coils is thermostatically controlled, which al-

lows automatic compensation for changes in production rate or climate.

Steam is also supplied to heating coils in a second stage separator to keep liquid production warm and to speed the separation of distillate and water.

For further information write Union Tank Division, Butler Manufacturing, P. O. Box 8444, Houston 4, Texas.



New Steel Gate Valve Speeds Tests in Lines

Complete, fast servicing and testing in the line is made possible by a new forged steel gate valve designed by Velan Valve Corporation.

The one-piece forged steel body eliminates the body-bonnet leakage and the bottom guide cover permits the removal and replacement in the line of the wedge, stem, back seat and the

(Continued on next page)

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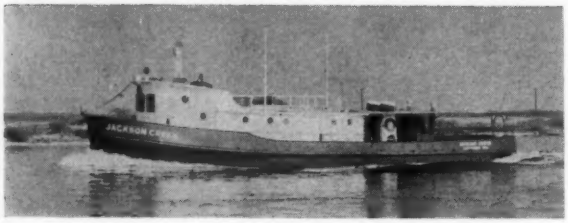

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New Gate Valve . . .

(Continued from preceding page)

two screwed-in seats in a matter of minutes. Positive wedge guiding is also accomplished with precision machined guides and wedge dragging is not possible.

For further information write Velan Valve Corporation, Beekmantown Road, Plattsburg, New York.

First Heavy End Pipe Built Using Aluminum

First heavy end aluminum pipe ever offered by the American aluminum industry has been announced by Reynolds Metals Company.

Produced through a new extrusion process developed by Reynolds, the heavy end pipe offers increased strength and thickness at pipe ends where welded or threaded joints are made, while utilizing less metal in the pipe body.

Pipe ends of the new product are identical to those of standard pipe and are adaptable to grooving and preparing for various types of fittings. **For further information write Reynolds Metals Company, Richmond 18, Virginia.**

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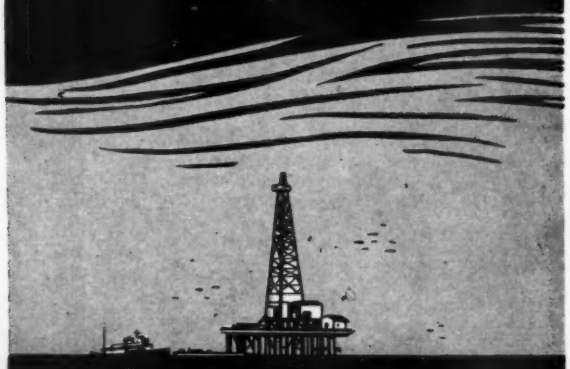

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Conoco hits . . .

Triple Gas Strike Completed

Wildcat in West Delta Block 69 flows 10,362 MCFGD plus 108 bbls. distillate from total of three zones

A triple completion which tested 10,362,000 cu. ft. of gas and 108 bbls. of distillate per day is Continental Oil Company's newest gas discovery off Plaquemines Parish.

The well, No. 1 OCS-0181 State Lease 1533, is located in West Delta Block 69. Reaching a total depth of 13,004 ft., drillers set 9⅝-in. casing at 11,020 ft.

At the lowest perforation, 7516-21 ft., the well flowed 3,170,000 cu. ft. of gas and 48 bbls. of distillate.

The producer tested 3,530,000 cu. ft. of gas and 36 bbls. of distillate at 6280-85 ft. From the upper sand, 6168-73 ft., the well flowed 3,662,000 cu. ft. of gas and 24 bbls. of distillate.

New Oil Zone Is Opened Off St. Mary Parish, La.

Continental Oil Company has opened a new oil producing zone in Eugene Island Block 208 field off St. Mary Parish, Louisiana.

Well No. A-2 (OCS-0576) was drilled to a total depth or 12,020 ft. by the contractor, Reading and Bates Offshore Drilling Company, and plugged back to 10,759 ft, for completion. Perforated at the interval of 10,029 to 10,034 ft., it yielded a potential flow of 352 bbls. of oil with 254,000 cu. ft. of gas per day on an 8/64-in. choke. Gravity of fluid was 34.4 degrees and the gas-oil ratio was 721.1.

Floating Vessel Will Begin Wildcat Off Northern Peru

Exploratory drilling from a floating vessel will soon get underway off Peru.

First big offshore operations for Peru will be on 162,647-acre concession off the northern coast adjacent to onshore fields of El Alto and Lobitos.

The **Rincon**, a floating vessel previously used for core drilling off California, was towed to the lease. Partners in the venture are Richfield Oil Corporation, Cities Service Oil Company and Douglas Oil Company of California. A Cities Service subsidiary, Peruvian Pacific Petroleum Company, is the operator.

Shell, Todd Drill Wildcat On Coast Of North Island

Shell BP Trading Limited and Todd Oil Services Ltd. are drilling their first wildcat on the West Coast of the North Island of New Zealand.

The companies spent $3 million over a three-year period in surveying the area prior to drilling. Rig being used is capable of drilling to 12,000 ft.

Seismic surveys are presently being conducted on the east coast of the same island by BP Exploration Company, operator for BP Shell and Todd.

Test In Vermilion Bay Area Is Finaled As Dual Gasser

A deep wildcat in the Vermilion Bay area of Vermilion Parish has been completed as a gas-distillate discovery in two separate zones.

The dual completion is Gulf Oil Corporation's No. 1 State Lease 3306 drilled to a total depth of 15,430 ft.

Gulf perforated in a deep zone at the interval of 15,172 to 15,189 ft. for a total daily flow of 94 bbls. of distillate and 971,000 cu. ft. of gas on a ¼-in. choke. Gravity of fluid was 48.2 degrees; tubing pressure registered 4756 pounds; and gas-oil ratio was 10,330 to one.

Flow from the upper sand with perforations at 14,640 ft. to 14,654 ft. was 112 bbls. of distillate and 1,025,000 cu. ft. of gas per day on a ¼-in. choke. Identical tubing was recorded for both zones.

PALM TREES beautify Richfield Oil Corporation's Pacific drilling island and help conceal it from scenery conscious residents on the mainland 3000 ft. away. One of the first discoveries since the resumption of offshore leasing in California was drilled recently from the $1.5 million, one-acre island. Since that time, drilling has proceeded rapidly and several wells have been completed.

Engineer's Notebook

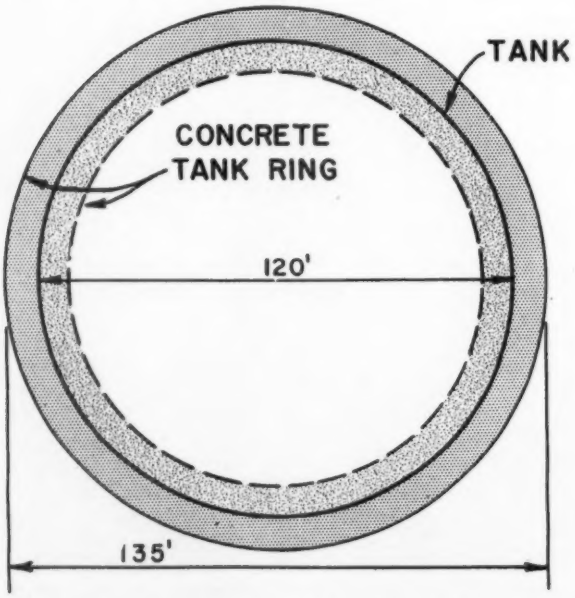
TIPS ON TANKS

1. How to support a tank where the bearing capacity of the soil is low.

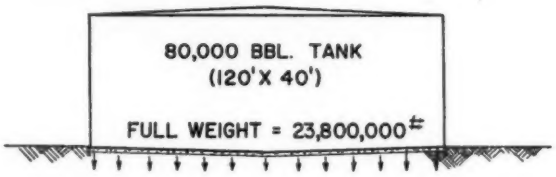
Problem—As a rule, tank foundations are quite simple. A light concrete retaining wall around the periphery of the tank is usually sufficient to prevent lateral movement of the soil, and a four-inch sand fill makes an excellent support beneath the tank. But in marsh and unstable soil, a tank may settle, causing damage to the piping and to the tank itself.

The most obvious solution to this problem is to drive a pattern of piling; cap the piles with a concrete mat, then erect the tank. Trouble with this method is that it is very expensive, and often the less expensive solution shown below is quite satisfactory.

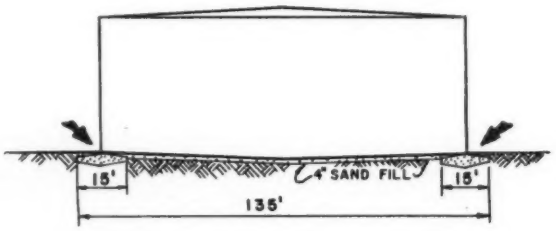
Solution—The trick is to reduce the bearing load on the soil. The best means of accomplishing this is to increase the area of tank foundation. One way to do this is to pour a reinforced concrete tank ring around the tank periphery increasing the effective diameter of the tank bottom. This tank ring should be carefully designed because its weight is additive. Lightness can be achieved by reducing the cross sectional area where strength is not needed, or by including cardboard voids in the concrete.



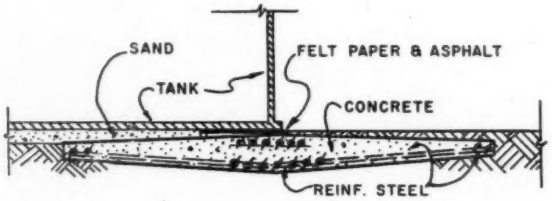
Example—Here is the problem that faced a company building storage facilities on the Gulf Coast of Texas. The soil was marshy, and engineers estimated its bearing capacity below 2000 lbs./sq. ft. However, the gross weight of each of the 80,000 barrel tanks which were required, came to 23,800,000 pounds. This gave an average bearing load on the soil of 2100 lbs./sq. ft.



Load=2100 lbs./sq. ft. Too high, so . . .

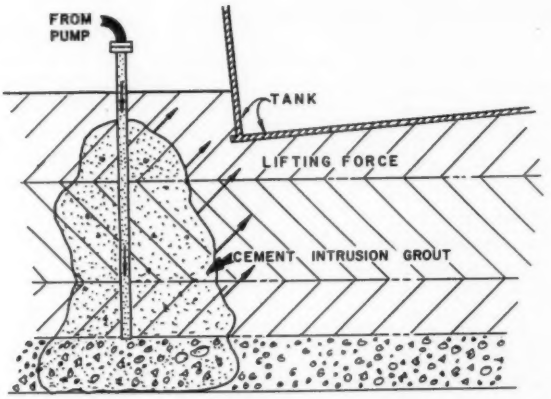


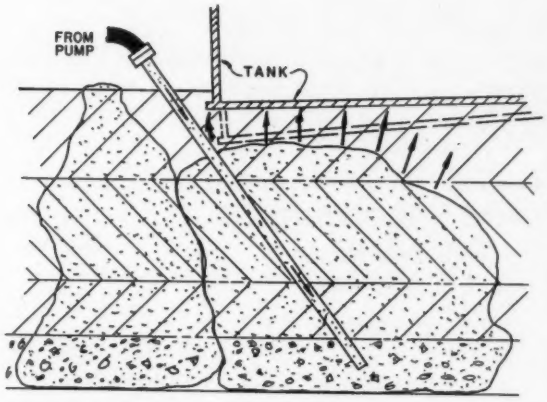
Reinforced Concrete Tank Ring extends diameter to 135 ft. Bearing Load=1600 lbs./sq. ft.



Company engineers solved the problem by designing the foundations shown here. A 15-ft-wide tank ring was centered around the circumference of the tank, extending the overall diameter of the tank from 120 ft. to 135 ft. This reduced the bearing load to 1600 lbs./sq. ft.

Note that the tank actually rests on a pad of asbestos felt and asphalt. This provides slippage for expansion and contraction as well as a seal for surface water.





2. How to stabilize and level a tank that is settling.

Problem—It is not uncommon for storage tanks to settle. Most of them do so with the passage of years—to some degree. But if the settling is severe, trouble comes. Over-stressed piping may break, tank drainage may be impaired. If the settling is unequal—real trouble may result.

Solution—Here is one method of correcting the problem. It has, on occasion, proved highly effective. Summed up, the procedure is this: Pump special cement grout into the soil around the tank to form an underground retaining "wall"; then pump grout directly beneath the tank. Not only has this method arrested tank settling, it has raised and leveled the tanks to proper grade!

The grout is made from special Portland cement with additives that permit it to be pumped into the interstices of the silt, sands, etc. beneath the tank. But to gain high strength, the water-to-cement ratio should be low. Two additives make this possible. They are"Intrusion Aid" (an admixture patented by Intrusion Prepakt, Inc.) and Alfesil, a high grade pazzolanic mixture.

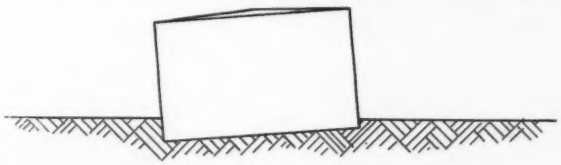
After small diameter pipes are driven into the soil—at depths which vary from 3 to 50 ft.—a high pressure pump squeezes the cement slurry into the formation. Why doesn't the slurry come up on the outside of the pipes? The driving action tends to compact the soil around the pipe to form an effective seal that prevents this.

To be effective, this method of soil stabilization should follow a careful pattern. First, a circle of grout points or stations should be laid out around the periphery of the tank. Vertical pipes are driven into the earth to the proper depths and grouted in a manner to minimize strains and stresses that may be imposed on the tank as it is raised from pressure beneath it. If the holes are, say, three feet apart, perhaps every fourth hole will be grouted first, then one of the intermediate holes, and so on until after four passes around the tank, all of holes have been grouted. If the tank has settled on one side, more grout will be pumped into the formation on that side.

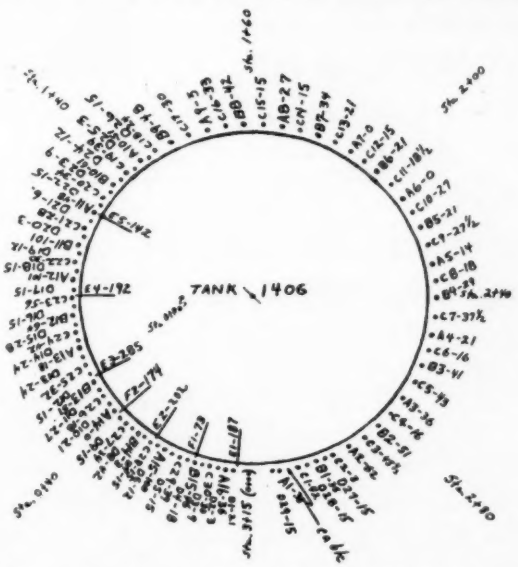
After the retaining "wall" has been completed through the vertical pipes, pipes are driven at an angle so as to bottom beneath the tank. These holes are grouted until the tank is raised to the desired level.

Example*—Shown here is a tank which had settled unevenly. The first step in stabilizing the foundation and raising the tank to a level position was to lay out 89 holes around the periphery of the tank. These holes were alternately designated as A, B, C, or D.

The first time around the tank, A-1, A-2, A-3 . . . A-16 were grouted, the holes taking from 3 to 62 cu. ft. of material each. Next the B's were grouted, then the C's and the D's finished the underground retaining "wall,"



which would prevent lateral movement of soil beneath the tank. This part of the operation required 2527 cu. ft. of grout, with 1700 cu. ft. of this amount going into the soil on the left side of the tank which had settled. During



this operation the tank raised slightly, particularly on the low side.

The final operation was to drive pipes on a 30° angle underneath the tank. These were designated on the drawing as E and F's. A total of 1252 cu. ft. of cement slurry was pumped into these holes, and the tank was elevated to finished grade.

All told this operation required 3782 cu. ft. of intrusive cement slurry, and the result was a highly stablized foundation underneath a level tank.

***From a paper presented at the Fifth Annual Meeting of the API Division of Transportation in Philadelphia by E. E. Mincheff, Great Lakes Pipe Line Co., Kansas City.**

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Tidelands Case . . .

(Continued from page 27)

ever, the United States requested a delay, fearful that a decision for the states might have reverberations upon the controversy over international boundaries which will be discussed at the Conference on Law of the Sea in Geneva, Switzerland, this summer.

Now the Supreme Court says it will hear the Tidelands Case October 12 on the first day of its 1959-60 term following its summer recess.

The case pits the Federal Government against the five Gulf Coast states of Texas, Louisiana, Mississippi, Alabama, and Florida, with oil-rich tidelands between three and 10½ mi. at sea at stake.

The states contend that their jurisdictional boundaries extend to 10½ mi. at sea, but the United States declares they stop at the three-mi. limit.

West Africa

Big Offshore-Onshore Area To Be Explored By French

An exploration permit covering 2510 sq. mi. offshore from French West Africa, and 4224 sq. mi. onshore has been granted to Cie. Francaise des Petroles.

The company's contract calls for it to invest no less than $4 million for each five-year period it retains the lease. It is permitted two extensions of five years each, but must give up half the total acreage at the end of the first five years and one-third of the remainder after ten years.

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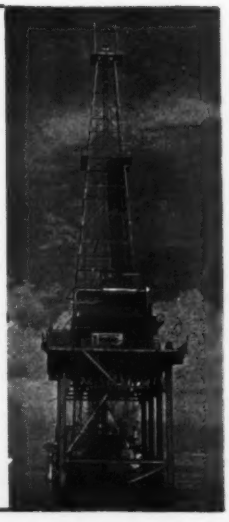

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Oil Man's Calendar

APRIL

5-10 ASME nuclear congress, Cleveland Auditorium, Cleveland.
8-10 API Division of Production, eastern district meeting, Penn-Sheraton Hotel, Pittsburgh.
13-17 29th Annual Safety Convention and Exposition, Hotel Statler, New York City.
14 Independent Oil Men's Assn. of New England, annual meeting, Hotel Statler, Boston.
15-17 API Division of Transportation, annual tanker conference, Jung Hotel, New Orleans.
15-17 National Petroleum Association, semi-annual meeting, Hotel Cleveland, Cleveland.
19-23 ASME, oil and gas power conference and exhibit, Shamrock-Hilton Hotel, Houston.
22-24 API Division of Production, mid-continent district meeting, Herring Hotel, Amarillo.

30-MAY

1 API Division of Production, Pacific coast district meeting, Biltmore Hotel, Los Angeles.

MAY

3- 6 LPGA, annual meeting, Conrad Hilton Hotel, Chicago.
4- 6 API Division of Marketing, Lubrication Committee meeting, San Marcos Hotel, Chandler, Ariz.
4- 7 American Geophysical Union, annual meeting, Washington, site unreported.
4- 8 API Safety & Fire Protection Committees, 12th midyear meeting, Rice Hotel, Houston.
6- 8 API Division of Production, Rocky Mountain district meeting, Gladstone, Henning and Townsend hotels, Casper, Wyo.
7- 8 Society of Petroleum Engineers of AIME, Permian Basin oil recovery conference, Midland, Texas, site unreported.
13-15 API Division of Transportation, annual pipe line conference, City and site unreported.
15-24 International Petroleum Exposition, Tulsa.
27-29 API Division of Marketing, midyear meeting, The Savery, Des Moines.
27-29 API Division of Finance & Accounting, midyear meeting, Hotel Statler, Los Angeles.
27-30 API Division of Refining, midyear meeting, Statler Hotel, New York City.

31-JUNE

6 Fifth World Petroleum Congress, The Coliseum, New York City.

JUNE

1- 5 Fifth World Petroleum Congress Exposition, The Coliseum, New York City.
21-26 Air Pollution Control Association, annual meeting, Hotel Statler, Los Angeles.
22-23 Michigan Gas Association, meeting, Grand Hotel, Mackinac Island.
22-24 Canadian Gas Association, annual meeting, Empress Hotel, Victoria, B. C.

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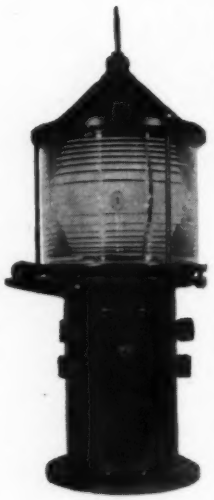

Exclusive design in the Tideland TL-2A marine light features the quickest, surest access clamps on the market, along with built-in moisture elimination, automatic 6 bulb lampchanger, and emergency steady light feature. The TL-2A with standard 200 mm lens is U.S. Coast Guard acceptable in ALL areas where private navigational aids are used. There is NO more practical, dependable, or economical marine obstruction lantern available!

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The Slush Pit . . .

Just before the invasion of Normandy, a general and his staff were watching a troop-carrying glider go by. From it came a carrier pigeon. Powerful field glasses followed the bird to a nearby field, and a colonel was dispatched to recover the bird. The message from the bird's leg was raced to the general who read it, cursed and threw it on the ground.

After the general left the field, the colonel picked up the message and read aloud to the waiting officers: "I have been sent down for being naughty in my cage."

He: "I'm going to kiss you every time a star falls."
She: (after ten minutes) "You must be counting lightning bugs."

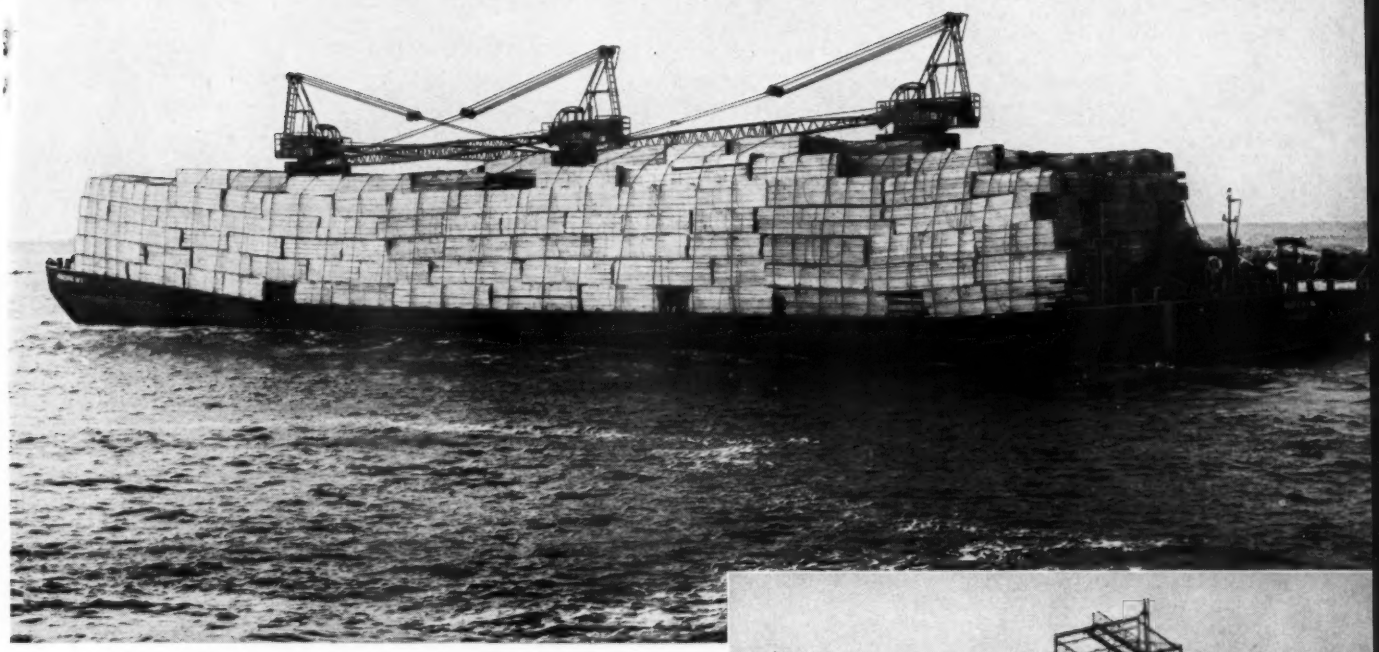
An elderly lady called the local manager of a telephone company complaining about the language used by a couple of linemen. In their report one of the men wrote, "Bill and me were working on this line, and I was up on the pole handling hot lead and dropped some of it down Bill's neck. Bill said, "Now, Ralph, you ought to be more careful with that hot lead," and I said, "I will do that, Bill. I will see that it don't happen again."

The driller and his new bride spent their first night in a rustic hotel. The husband went down to the dining room the next morning for a quick breakfast and, on returning to the second floor, he noticed to his horror that none of the rooms had numbers. In trying to find what he hoped was his room, he knocked on a door gently, purring, "Honey, honey, Oh honey, honey?"

From within came an answering bellow. "This is a bathroom, you idiot, not a beehive!"

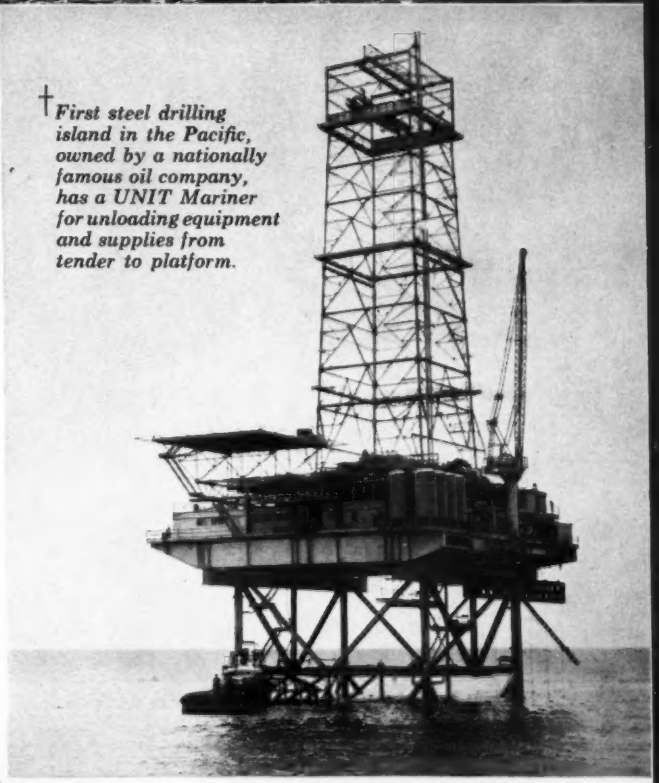
"Here he comes again!—This time without a helicopter!"

*First oil-lumber cargo combination barge "Pacific No. 1" equipped with three UNIT Mariners. Built for the Pacific Barging Company.



a pair of FIRSTS for UNIT

†First steel drilling island in the Pacific, owned by a nationally famous oil company, has a UNIT Mariner for unloading equipment and supplies from tender to platform.



***FIRST Oil-Lumber Cargo Barge**

†FIRST Steel Drilling Island

Equipped with UNIT Mariners for Cargo Handling

Specially designed and built for the marine field, UNIT Mariner Cranes are being successfully used for handling cargo from a fixed mounting on ships, barges, tenders and offshore drilling platforms.

Unlike the ratings of conventional cranes, the Mariner has all the safety factors outlined in the requirements for cargo gear of the American Bureau of Shipping. Turntable, roller path, rollers, hook shoes, boom hoist mechanism, "A" frame and boom have extra built-in strength. The positive boom stops control the angle of boom elevation, and the FULL VISION CAB enables the operator to see in all directions. All gears are enclosed in a sealed gear case as a protection against salt spray.

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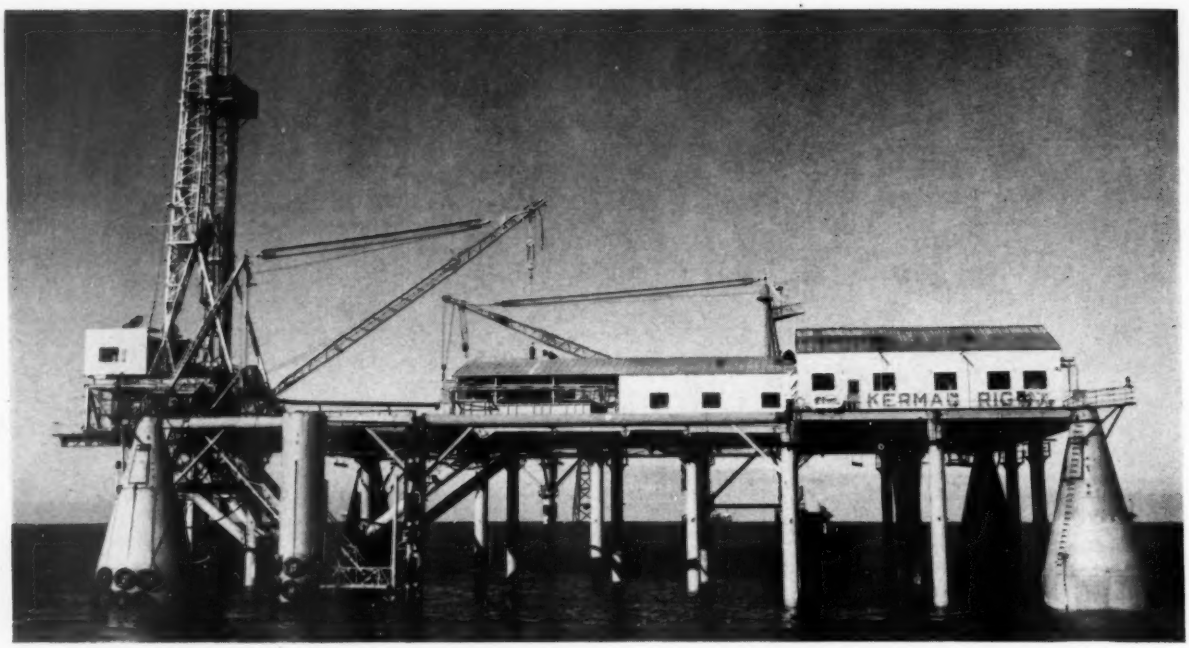


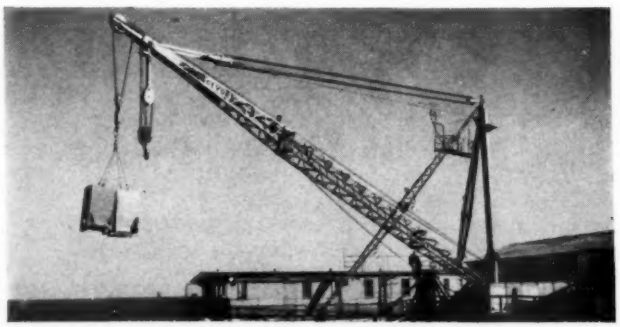
CLYDE DERRICKS and CLYDE HOISTS SERVE ON MASSIVE KERMAC RIG 47

Kerr-McGee Oil Industries, Inc. new Rig No. 47 is pictured above on location for Phillips Petroleum Company. Measuring 202 feet wide by 242 feet long, the new rig offers offshore platform space to spare with a maximum in stability. Built recently at Orange, Texas, Rig 47 was towed in two sections down the Sabine River and assembled at Sabine Pass before outfitting.

Materials handling equipment on this huge drilling rig had to meet tough specifications for reach, capacity and round-the-clock endurance. Two stiff-leg Clyde derricks operating with Clyde electric hoists and swingers proved the answer. These derricks with 100-foot booms are positioned to serve the full area of the giant Texas deck. The hoists are powered by the rig's main diesel generators.

Although the installation and service on drilling rigs are highly specialized, the Clyde equipment that was furnished on Rig 47 is standard equipment. This not only made possible substantial savings in design and construction costs, but also gave the strongest possible assurance of getting performance tested machinery. The all-welded booms and stiff-legs, rigid steel hoist frames and ball bearing shafts are but a few of the many Clyde quality features "right out of the catalog".

If dependable materials handling in any bulk or form is a problem that concerns you, check with Clyde. Find out why Clyde equipment pays *you* best.



CLYDE DERRICK BOOSTS MUD CANS FROM BOAT TO TOPSIDE. With 100-foot booms, the Clyde derrick on No. 47 reaches the extreme non-drilling end of the giant deck. At right, bulk mud cans are being unloaded from Kermac Work Boat III, anchored alongside rig.

For offshore, for ship or shore, Consult Clyde Marine Engineering Department

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